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Water Resources Data for Ohio, Water Year 1977. Volume 2
St. Lawrence River Basin

Geological Survey, Columbus, Ohio Water Resources Div

May 78

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Water Resources Data for Ohio

Water Year 1977

Volume 2. St. Lawrence River Basin

U.S. DEPARTMENT OF THE INTERIOR
MARCH 3, 1849

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OH-77-2

Prepared in cooperation with the State of Ohio
and with other agencies

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INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

CALENDAR FOR WATER YEAR 1977

1976

OCTOBER

S	M	T	W	T	F	S
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31						

NOVEMBER

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1977

JANUARY

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MAY

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JUNE

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AUGUST

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SEPTEMBER

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Water resources data for the 1977 water year for Ohio consist of records of stage discharge, and water quality of streams; stage, contents and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report in the two volumes, contains discharge records for 164 gaging stations, stage and contents for 32 lakes and reservoirs; water quality for 157 gaging stations, 69 partial-record stations and 54 wells; and water levels for 54 observation wells. Also included are 67 crest-stage partial-record stations and 65 low-flow partial-record stations. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Ohio.

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PREFACE

This report was prepared by personnel of the Ohio district of the Water Resources Division of the U.S. Geological Survey under the supervision of J.F. Blakey, District Chief, succeeded by D.E. Click, and J.T. Callahan, Regional Hydrologist, Northeastern Region, succeeded by J.E. Biesecker. It was done in cooperation with the State of Ohio and with other agencies.

This report is one of a series issued by State. General direction for the series is by J.S. Cragwall, Jr., Chief Hydrologist, U.S. Geological Survey, and G.W. Whetstone, Assistant Chief Hydrologist for Scientific Publications and Data Management.

Data for Ohio are in two volumes as follows:

Volume 1. Ohio River basin
Volume 2. St. Lawrence River basin

Water Resources Data
for
Ohio

Water Year 1977

Volume 2. St. Lawrence River Basin

U.S. DEPARTMENT OF THE INTERIOR
MARCH 3, 1849

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OH-77-2

Prepared in cooperation with the State of Ohio
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR
CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

W. A. Radlinski, Acting Director

For information on the water program in Ohio write to
District Chief, Water Resources Division
U.S. Geological Survey
975 West Third Avenue
Columbus, Ohio 43212

1978

CONTENTS

page

Preface.. III
List of hydrologic stations, in downstream order, for which records are published.... VI
Introduction.. 1
Cooperation.. 1
Hydrologic conditions.. 2
Definition of terms.. 2
Downstream order and station number.. 6
Numbering system for wells and miscellaneous sites.. 6
Special networks and programs.. 7
Explanation of stage and water-discharge records.. 7
  Collection and computation of data.. 7
  Accuracy of field data and computed results.. 9
  Other data available.. 9
  Records of discharge collected by agencies other than the Geological Survey........ 10
Explanation of water-quality records.. 10
  Collection and examination of data.. 10
  Water analysis.. 10
  Water temperature.. 10
  Sediment.. 10
Explanation of ground-water level records.. 11
  Collection of the data.. 11
Publications on techniques of water-resources investigations.. 12
Station records.. 16
Discharge at partial-record stations and miscellaneous sites.. 194
  Low-flow partial-record stations.. 194
  Crest-stage partial-record stations.. 199
  Miscellaneous sites.. 200
Ground-water records.. 201
Chemical characteristics and biological indices of selected lakes.. 210
Index.. 211
Factors for converting English units to International System (SI) units........Inside back cover

ILLUSTRATIONS

Figure 1. System for numbering wells and miscellaneous sites (latitude and longitude).. 7
Figure 2. Map showing location of data-collection stations.. 14

HYDROLOGIC STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

[Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment]

Page

ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE ERIE

- Ottawa River at Toledo University, Toledo (dc) 16
- Maumee River at Antwerp (dc) 18
- Maumee River at Defiance (ct) 20
  - Bean Creek (head of Tiffin River) at Powers (dc) 26
  - Tiffin River at Stryker (dc) 28
  - Tiffin River at Evansport (ct) 30
  - Auglaize River near Ft. Jennings (dct) 36
    - Ottawa River at Allentown (dct) 42
  - Auglaize River at Cloverdale (ct) 48
    - Blanchard River near Findlay (dct) 54
  - Auglaize River near Defiance (dc) 60
- Maumee River near Waterville (ct) 62
- Maumee River at Waterville (dcbtm) 68
- Portage River at Woodville (d) 73
- Portage River at Railroad Bridge at Woodville (ct) 74
- Sandusky River near Bucyrus (dc) 80
  - Broken Sword Creek at Nevada (dc) 82
- Sandusky River near Upper Sandusky (dct) 84
  - Tymochtee Creek at Crawford (dc) 90
- Sandusky River near Mexico (dc) 92
  - Honey Creek at Melmore (dc) 94
  - Wolf Creek at Bettsville (dc) 96
    - East Branch Wolf Creek near Bettsville (dc) 98
- Sandusky River near Fremont (d) 100
- Sandusky River below Fremont (ct) 101
- Huron River at Milan (d) 106
- Huron River below Milan (ct) 107
- Vermilion River near Vermilion (dct) 112
- Black River at Elyria (d) 118
- Black River below Elyria (ct) 119
- Rocky River near Berea (dctm) 124
- Cuyahoga River at Hiram Rapids (dc) 128
  - Little Cuyahoga River at Mogadore (dc) 130
  - Little Cuyahoga River below Ohio Canal at Akron (dc) 132
- Cuyahoga River at Old Portage (dctm) 134
- Cuyahoga River at Ira (dc) 142
  - Tinkers Creek at Twinsburg (cm) 144
  - Tinkers Creek at Bedford (dcm) 147
  - Tinkers Creek near Independence (cm) 150
  - Ohio Canal at Independence (dc) 154
- Cuyahoga River at Independence (dcbmtm) 156
  - Big Creek at Cleveland (dc) 166
- Cuyahoga River at West Third Street bridge in Cleveland (ct) 168
- Euclid Creek near Euclid (dc) 174
- Chagrin River at Willoughby (dcm) 176
- Grand River near Painesville (d) 179
- Grand River at Painesville (ct) 180
- Ashtabula River near Ashtabula (d) 185
- Ashtabula River at Ashtabula (ct) 186
- Conneaut Creek at Conneaut (dc) 192

WATER RESOURCES DATA FOR OHIO, 1977

INTRODUCTION

Water resources data for the 1977 water year for Ohio consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report, in two volumes, contains discharge records for 164 gaging stations; stage and contents for 32 lakes and reservoirs; water quality for 157 gaging stations, 69 partial-record stations, and 54 wells; and water levels for 54 observation wells. Also included are 67 crest-stage partial-record stations and 65 low-flow partial-record stations. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Ohio.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, Va. 22304.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report OH-77-2." Water-Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Va. 22161.

COOPERATION

The U.S. Geological Survey and organizations of the State of Ohio have had cooperative agreements for the systematic collection of streamflow records since 1898, for ground-water levels since 1936, and for water-quality records since 1946. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Ohio Department of Natural Resources, R.W. Teater, director, through Division of Water, W.S. Nichols, chief.

Ohio Environmental Protection Agency, N.E. Williams, director, through Division of Surveillance and Laboratory Services, Terry Voss, chife.

Ohio Department of Transportation, R.D. Jackson, director, through Division of Highway, L.R. Talbert, engineer for research and development.

Miami Conservancy District, L.B. Coy, general manager and secretary.

Three Rivers Watershed District, G.H. Watkins, secretary-treasurer.

City of Columbus Department of Public Service, R.C. Parkinson, director, through Division of Water, Jack Holt, superintendent.

City of Toledo, J.B. Daken, city manager, through Department of Public Utilities, N.B. Tennant, commissioner of water reclamation.

City of Canton Water Department, J.D. Williams, superintendant.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army in collecting records for 142 hydrologic-data stations in this report, by the Agricultural Research Service, U.S. Department of Agriculture for 40 stations, by the Soil Conservation Service, U.S. Department of Agriculture for 7 stations, by the Environmental Protection Agency for 3 stations, and by the International Joint Commission, U.S. Department of State for 1 station.

Organizations that supplied data are acknowledged in station descriptions.

HYDROLOGIC CONDITIONS

At the start of the 1977 water year, streamflow was excessive in the central and eastern parts of the State. Below normal precipitation during the fall months gradually reduced streamflow until all index stations were reporting runoff well below average except in the most eastern part of the State.

One of the severest winters of record resulted in all stations reporting deficient runoff during January and most of February. A warming trend starting February 21 accompanied by precipitation starting on the 23rd resulted in a gradual movement of ice out of the channels and by March all streams were reporting normal runoff.

Heavy rains during the latter part of April caused excessive runoff in northwest and eastern Ohio. Below normal precipitation resulted in deficient runoff throughout the State during June and July. Increased precipitation resulted in excessive runoff in all but western Ohio at the close of the water year.

Ground-water levels in general reflected seasonal changes except for the northeastern area where a record low for the month of May occurred.

DEFINITION OF TERMS

Terms related to streamflow, water quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/s, ft^3/s, cfs) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to the amount of substance present in true chemical solution. In practice, however, the term includes all forms of substance that will pass through a 0.45-micrometer membrane filter, and thus may include some very small (colloidal) suspended particles. Analyses are performed on filtered samples.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution area, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface stream and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (UG/G, ug/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per kilogram (UG/KG, ug/kg) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (kilogram) of bottom material.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.0	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, number, mass or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC,pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended-sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is the quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductence is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1976.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 04041000, which appears just to the left of the station name, includes the 2-digit part number "04" plus the 6-digit downstream order number "041000".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1.

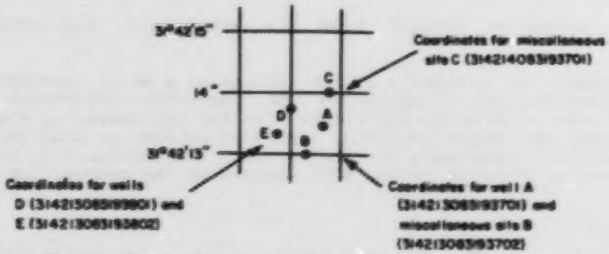
31°42'15"
Coordinates for miscellaneous site C (314214083193701)
C
14"
D
A
E
B
31°42'13"
Coordinates for wells D (314213083193801) and E (314213083193802)
Coordinates for well A (314213083193701) and miscellaneous site B (314213083193702)

Figure 1.--System for numbering wells and miscellaneous sites (latitude and longitude)

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text-books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-back water techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage height and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some northern stream-gaging stations, the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves.

During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs, a monthly summary table of stage and contents is given. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE". In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "EXTREMES" are given first, the extremes for period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion. In the yearly summary, below the monthly summary the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record stations are presented in two tables. The first is a table of discharge measurements and water-quality data at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made or water-quality samples are taken to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements and chemical analyses are also given in special tables following the tables of partial-record stations.

For gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

Records of discharge not published by the Geological Survey were collected during water year 1977 at many sites in Ohio by the National Weather Service, NOAA, U.S. Department of Commerce, by the Corps of Engineers, U.S. Army and by other agencies. The National Water Data Exchange, Water Resources Division, U.S.Geological Survey, National Center, Reston, Va. 22092, maintains an index of such sites. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, descriptive statements are given; the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small daily temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figure 2.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between sucessive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office. Prices are effective January 1978 but are subject to change.

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature-influential factors, field measurement, and data presentation*, by H. H. Stevens Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages. $1.60.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W.Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages. $0.85

2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages. $1.90.

2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages. $1.75.

3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages. $1.00.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages. $0.35.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages. $0.40.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages. $1.00.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages. $0.35.

3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6, 1968, 13 pages. $1.00.

3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages. $1.40.

3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages. $1.25.

3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages. $1.20.

3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 pages. $0.35. Not currently available.

3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages. $0.70.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2 1976. 172 pages. $2.50.

3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages. $0.65.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2, 1970. 59 pages. $2.50.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages. $2.10.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4 Chapter A1. 1968. 39 pages. $1.60.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages. $0.35.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972, 18 pages. $0.65.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages. $0.75.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages. $0.65.

4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages. $1.10.

5-A1. *Methods for collection and analysis of water samples for dissolved minerals and gases*, by Eugene Brown, M. W. Skougstad, and M. J. Fishman: USGS--TWRI Book 5, Chapter A1. 1970. 160 pages. $2.40.

5-A2. *Determination of minor elments in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages. $0.80.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages. $0.90.

5-A4.* *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P.E. Greeson, T.A. Ehlke, G.A. Irwin, B.W. Lium, and K.V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages. $20.00.

5-A5.* *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages. $16.00.

5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages. $2.10.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages. $2.30.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages. $0.70.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages. $1.10.

*These publications are available ONLY from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. They are in looseleaf format and are subscription items. Additional supplements will be issued to subscribers at no extra cost. Checks should be made payable to Superintendent of Documents. Requester should emphasize to Superintendent of Documents that this is a subscription item.

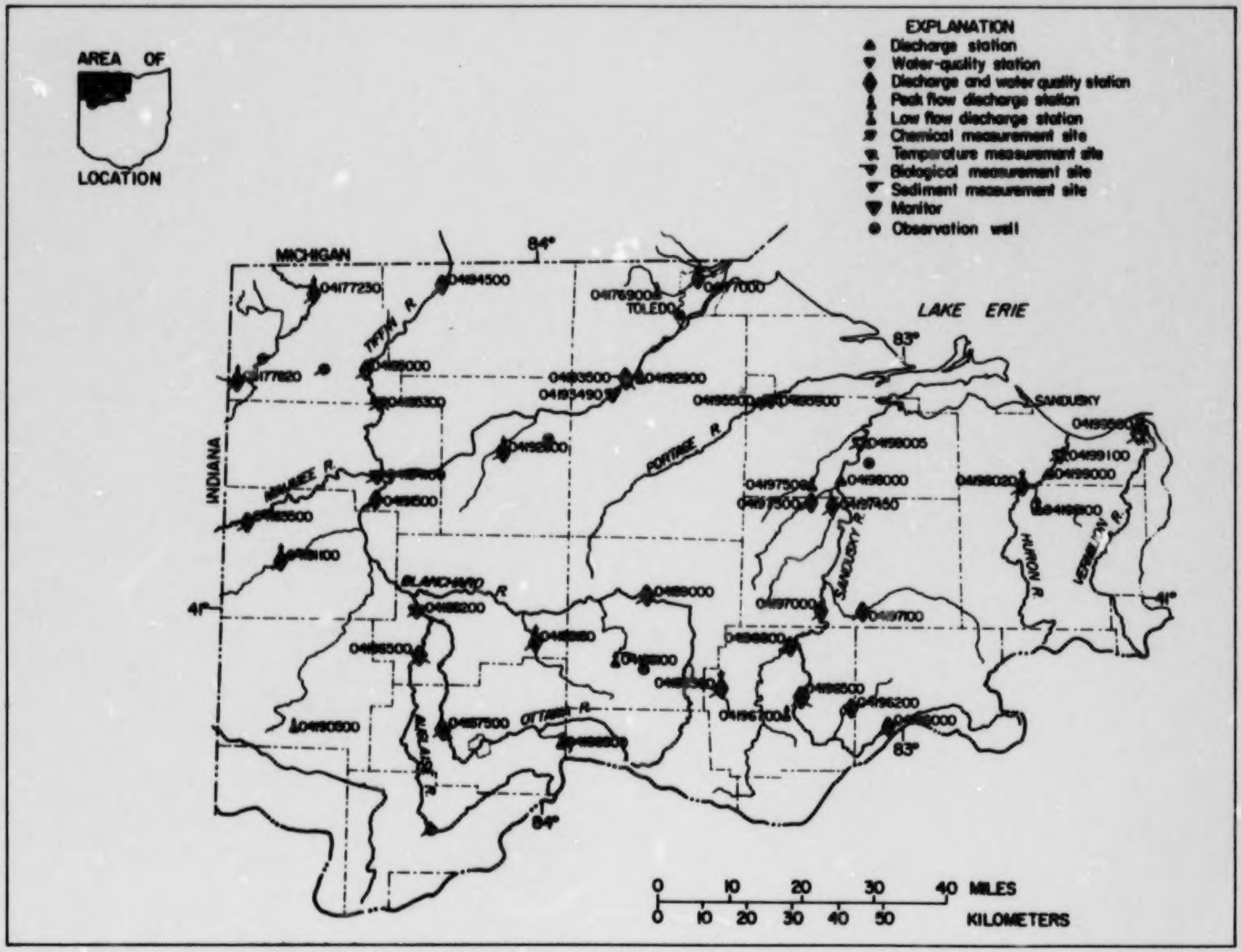
AREA OF
LOCATION
EXPLANATION
▲ Discharge station
▼ Water-quality station
◆ Discharge and water quality station
Peak flow discharge station
Low flow discharge station
Chemical measurement site
Temperature measurement site
Biological measurement site
Sediment measurement site
▼ Monitor
● Observation well
MICHIGAN
INDIANA
LAKE ERIE
84°
83°
41°
TOLEDO
SANDUSKY
TIFFIN R.
MAUMEE R.
BLANCHARD R.
AUGLAISE R.
OTTAWA R.
PORTAGE R.
SANDUSKY R.
HURON R.
VERMILION R.
04177250
04184500
04177000
04176900
04177620
04193500
04192900
04193490
04190500
04197500
04197450
04198000
04198005
04199100
04199000
04197000
04197100
04196200
04187500
04189000
0 10 20 30 40 MILES
0 10 20 30 40 50 KILOMETERS

FIGURE 2a.--Location of data-collection stations

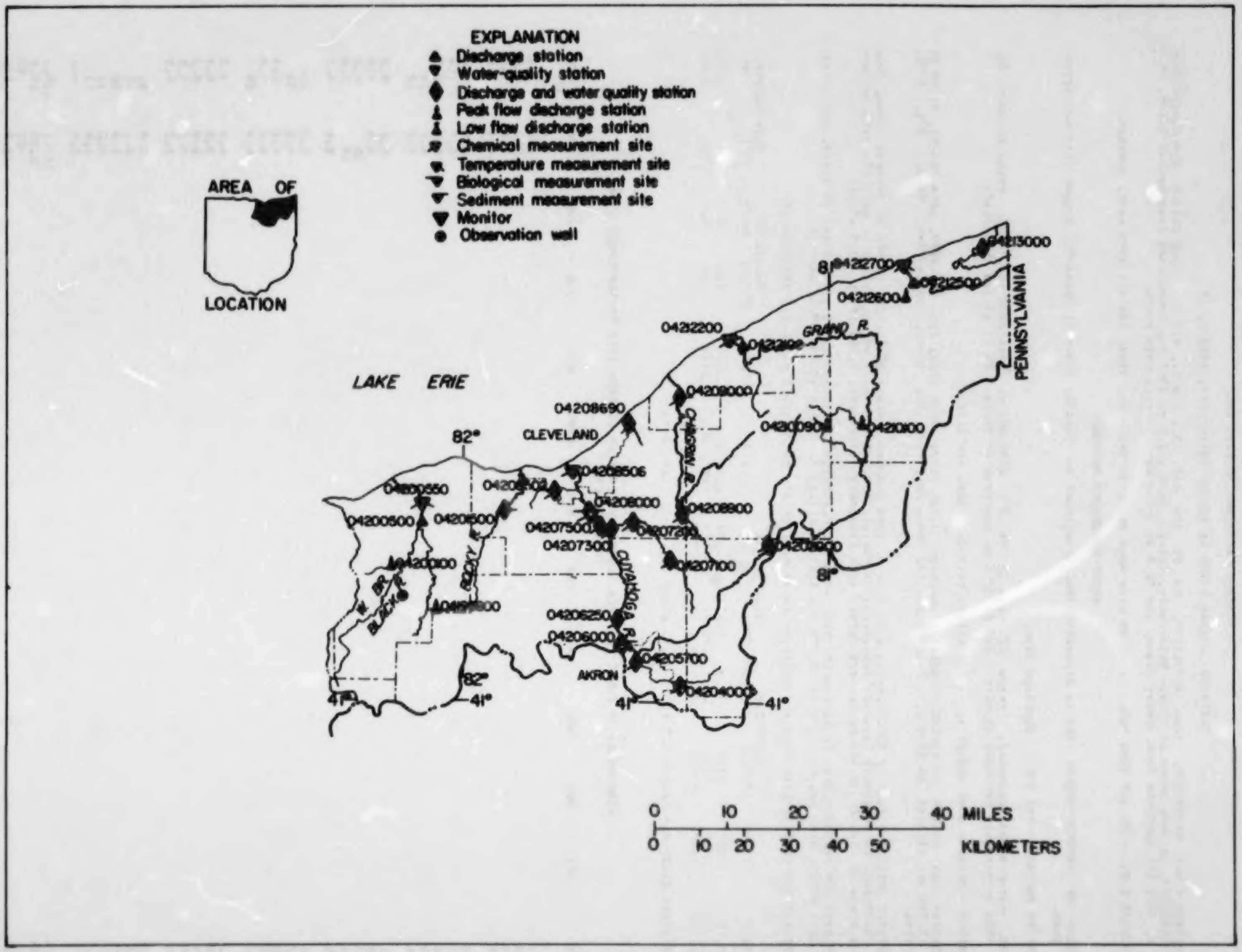
EXPLANATION
▲ Discharge station
▼ Water-quality station
◆ Discharge and water quality station
Peak flow discharge station
Low flow discharge station
Chemical measurement site
Temperature measurement site
Biological measurement site
Sediment measurement site
▼ Monitor
● Observation well
AREA OF
LOCATION
LAKE ERIE
CLEVELAND
AKRON
PENNSYLVANIA
GRAND R.
CHAGRIN R.
CUYAHOGA R.
ROCKY R.
BLACK R.
82°
81°
41°
04213000
04212700
04212500
04212600
04212200
04212100
04209000
04208690
04210090
04210100
04208506
04208000
04208800
04207500
04207200
04207300
04207100
04201900
04206250
04206000
04205700
04204000
04200550
04200500
04201500
04200100
0 10 20 30 40 MILES
0 10 20 30 40 50 KILOMETERS

FIGURE 2b.--Location of data-collection stations

STREAMS TRIBUTARY TO LAKE ERIE

04177000 OTTAWA RIVER AT TOLEDO UNIVERSITY, TOLEDO, OH

LOCATION.--Lat 41°39'07", long 83°36'40", in NE 1/4 sec. 32, T.9 S., R.7 E., Lucas County, Hydrologic Unit 04100001, in pump house at Toledo University, Toledo, Ohio., 0.5 mi (0.8 km) downstream from Deline Ditch, 5.5 mi (8.8 km) upstream from Sibley Creek, and 10.8 mi (17.4 km) upstream from mouth.

DRAINAGE AREA.--150 mi² (388 km²). Area at site used prior to Sept. 30, 1948, 150 mi² (388 km²), revised.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1945 to September 1948 (published as "Tenmile Creek at Toledo"), August 1976 to current year.

REVISED RECORDS.--WSP 1307: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 576.28 ft (175.650 m) above mean sea level. Prior to Sept. 30, 1948 water-stage recorder at site 3,000 ft (914 m) upstream at datum 3.72 ft (1.134 m) higher.

REMARKS.--Records good except those for winter periods, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,530 ft³/s (71.6 m³/s) Apr. 24, 1977, gage height, 12.43 ft (3.789 m); minimum, no flow Aug. 24 to Sept. 19, 1945, July 7-15, Aug. 12-15, Sept. 1-9, 16-22, Oct. 5-10, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1943 reached a stage of 15.1 ft (4.602 m) present datum, from floodmark, Lucas County Sanitary Engineers, discharge, 3,400 ft³/s (96.3 m³/s). Flood of Apr. 25, 1950 reached a stage of 15.0 ft (4.572 m) present datum, from floodmark, discharge, 3,300 ft³/s (93.5 m³/s).

EXTREMES FOR PERIOD AUGUST TO SEPTEMBER 1976.--Maximum discharge, 236 ft³/s (6.68 m³/s) Sept. 26 (base, 800 ft³/s, 22.7 m³/s), gage height, 3.99 ft (1.216 m); minimum daily, 1.4 ft³/s (0.040 m³/s) Sept. 6.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (22.7 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 5	1500	1180	33.4	9.36	2.853	July 5	0500	803	22.7	7.79	2.374
Mar. 29	1100	1530	43.3	10.37	3.161	Sept. 20	2130	833	23.6	7.95	2.423
Apr. 24	2400	*2530	71.6	*12.43	3.789						

Minimum daily discharge, 4.7 ft³/s (0.13 m³/s) Jan. 8-17, Feb. 5-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											6.4	2.3
2											6.2	2.2
3											6.2	2.0
4											6.4	1.9
5											6.4	1.6
6											8.0	1.4
7											6.7	1.9
8											6.1	3.3
9											6.1	10
10											5.8	12
11											5.8	5.8
12											5.5	4.9
13											15	4.0
14											10	3.6
15											8.0	6.7
16											5.2	19
17											4.9	39
18											4.2	8.4
19											4.2	5.5
20											4.0	20
21											4.0	8.0
22											3.8	6.1
23											3.6	5.2
24											3.2	5.5
25											3.2	5.8
26											5.8	91
27											6.1	67
28											3.8	32
29											3.2	19
30											2.8	13
31											2.5	---
TOTAL											173.1	408.1
MEAN											5.58	13.6
MAX											15	91
MIN											2.5	1.4
CFSM											.04	.09
IN.											.04	.10

04177000 OTTAWA RIVER AT TOLEDO UNIVERSITY, TOLEDO, OH--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	19	12	4.9	4.8	100	225	208	18	597	11	19
2	8.7	18	11	4.8	4.8	70	303	263	18	410	12	115
3	8.4	17	10	4.8	4.8	45	549	263	17	129	14	60
4	8.0	17	9.8	4.8	4.8	524	399	338	15	76	13	43
5	8.4	24	9.6	4.8	4.7	1060	331	350	34	566	31	32
6	78	18	9.4	4.8	4.7	671	252	314	28	226	108	27
7	38	18	9.4	4.8	4.7	257	160	259	18	93	37	23
8	39	17	9.4	4.7	4.7	188	126	166	17	49	27	21
9	23	16	9.4	4.7	4.9	232	96	122	42	63	20	20
10	16	17	9.4	4.7	17	268	86	94	20	32	282	19
11	14	16	9.4	4.7	40	236	79	78	19	26	218	18
12	12	16	9.2	4.7	60	243	68	67	19	30	298	16
13	11	16	9.2	4.7	40	368	67	59	18	23	167	70
14	11	16	9.2	4.7	24	304	59	51	17	20	76	65
15	11	15	9.2	4.7	16	208	51	44	15	18	44	66
16	11	14	9.4	4.7	11	150	46	40	13	45	44	67
17	11	15	9.6	4.7	10	105	43	40	14	25	34	102
18	10	16	10	4.8	9.6	133	41	37	18	27	25	108
19	12	16	11	5.2	9.2	162	41	34	13	30	22	256
20	18	17	16	5.6	8.6	256	48	32	13	18	20	669
21	13	17	12	6.0	8.2	323	42	27	16	17	62	563
22	12	17	9.6	5.8	16	560	171	28	15	18	53	188
23	12	16	7.6	5.4	40	443	1500	28	14	16	38	141
24	29	15	6.6	5.2	130	369	2360	26	15	14	53	116
25	17	17	6.0	5.0	120	329	2210	24	60	14	39	80
26	15	30	5.6	4.9	100	364	1560	22	39	13	30	232
27	14	27	5.4	4.8	150	606	993	23	31	13	25	421
28	14	16	5.2	4.8	120	1090	562	21	23	13	22	231
29	13	14	5.2	4.8	---	1470	391	19	19	12	34	122
30	14	13	5.0	4.8	---	1030	280	17	95	12	25	81
31	26	---	5.0	4.8	---	417	---	17	---	13	20	---
TOTAL	537.4	520	274.8	152.6	972.5	12581	13139	3111	713	2658	1904	3991
MEAN	17.3	17.3	8.86	4.92	34.7	406	438	100	23.8	85.7	61.4	133
MAX	78	30	16	6.0	150	1470	2360	350	95	597	298	669
MIN	8.0	13	5.0	4.7	4.7	45	41	17	13	12	11	16
CFSM	.12	.12	.06	.03	.23	2.71	2.92	.67	.16	.57	.41	.89
IN.	.13	.13	.07	.04	.24	3.12	3.26	.77	.18	.66	.47	.99

WTR YR 1977 TOTAL 40554.3 MEAN 111 MAX 2360 MIN 4.7 CFSM .74 IN 10.06

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March to June 1977.

WATER QUALITY DATA, MARCH TO JUNE 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 16...	1100	153	850	8.0	7.5	10.4	87	1.5	360	190	110	20
JUN 15...	1715	14	1010	8.4	22.5	14.8	170	5.2	370	180	110	23

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 16...	31	3.4	206	0	169	3.3	94	79	.2	7.1	446	9.5
JUN 15...	60	7.6	219	5	188	1.5	160	110	.4	4.6	589	1.5

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 16...	.11	.22	.20	1	10	3	20	6	60	.0	0	6.9
JUN 15...	.14	.10	.69	3	10	11	80	8	150	.2	40	6.5

04183500 MAUMEE RIVER AT ANTWERP, OH

LOCATION.--Lat 41°11'56", long 84°44'40", in sec. 22,T. 3N., R.1 E., Paulding County, Hydrologic Unit 04100005, on left bank 425 ft (130 m) downstream from bridge on State Highway 49, 1 mi (2 km) north of Antwerp, 7 mi (11 km) downstream from Indiana State line and 10 mi (16 km) upstream from Marie DeLarme Creek.

DRAINAGE AREA.--2,129 mi² (5,514 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to December 1935, April 1939 to current year.

REVISED RECORDS.--WSP 1174: 1927, 1933, 1940. WSP 1387: 1922-23, 1925-27, 1934. WRD Ohio 1970: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 694.90 ft (211.805 m) above mean sea level. Prior to Sept. 13, 1925, nonrecording gage at site 400 ft (122 m) upstream at same datum.

REMARKS.--Records good except those for winter periods and June 18 to Aug. 9, which are fair. Low flow slightly regulated by powerplant at Fork Wayne, Indiana, 32 mi (51.5 km) upstream. Flow slightly regulated by upstream reservoirs.

AVERAGE DISCHARGE.--52 years, 1,672 ft³/s (47.35 m³/s), 10.67 in/yr (271 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 ft³/s (742 m³/s) May 20, 1943, gage height, 20.29 ft (6.184 m); minimum daily, 26 ft³/s (0.74 m³/s) July 24, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 27, 1913, estimated as 40,000 ft³/s (1,130 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 8,000 ft³/s (227 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 6	0100	10900	309	13.68	4.170	Apr. 24	1000	*11300	320	*13.99	4.264
Mar. 29	1200	8560	242	11.88	3.621						

Minimum daily discharge: 130 ft³/s (3.68 m³/s) Feb. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	151	324	190	150	150	5000	4730	1930	265	4700	139	232
2	205	288	190	160	140	3800	4740	1830	259	4610	197	250
3	218	287	180	160	140	3000	5720	2020	215	2760	144	457
4	190	284	180	160	140	6410	6380	2610	154	1770	163	364
5	180	269	170	170	140	10500	5580	4180	207	1270	142	280
6	215	261	170	170	140	10700	4970	4640	197	853	493	230
7	457	256	160	160	140	9100	4110	3330	236	671	869	271
8	302	249	160	160	130	6690	4040	2810	223	642	522	239
9	274	241	160	170	130	5760	3420	2320	242	587	363	176
10	250	235	150	170	130	5440	2630	1920	351	583	352	214
11	216	231	150	160	150	4920	2310	1750	289	487	1010	198
12	229	230	150	160	260	4050	1690	1320	393	564	1940	158
13	227	224	140	160	440	3470	1570	1110	398	542	1480	224
14	200	216	140	160	540	3150	1290	994	357	414	892	832
15	189	212	140	160	470	2590	1230	553	354	417	617	1320
16	179	210	170	150	420	2520	1020	840	346	330	433	1420
17	238	202	200	150	360	1980	812	686	257	297	380	1390
18	609	196	210	150	330	3150	999	549	277	319	366	2140
19	566	195	200	150	310	4620	856	504	289	606	922	1710
20	233	192	190	150	290	4580	817	366	239	385	843	2170
21	245	191	190	160	290	4290	737	414	250	380	606	1910
22	204	195	180	160	300	3670	699	403	166	315	495	1530
23	189	192	180	160	450	3620	6090	443	203	348	589	1200
24	203	161	170	170	1500	4010	11100	313	205	240	421	795
25	269	182	170	170	3600	4410	9170	347	168	239	345	628
26	238	200	170	160	4200	4050	6000	354	426	233	278	602
27	209	235	160	160	3800	3520	4010	298	878	171	291	556
28	214	280	160	160	4200	5080	3750	292	417	231	267	754
29	217	232	160	160	---	8340	2890	276	621	154	259	897
30	232	200	150	150	---	7750	2550	264	500	182	472	684
31	298	---	150	150	---	5730	---	283	---	216	301	---
TOTAL	7846	6870	5240	4940	23290	155900	105910	39949	9382	25516	16591	23831
MEAN	253	229	169	159	832	5029	3530	1289	313	823	535	794
MAX	609	324	210	170	4200	10700	11100	4640	878	4700	1940	2170
MIN	151	161	140	150	130	1980	699	264	154	154	139	158
CFSM	.12	.11	.08	.08	.39	2.36	1.66	.61	.15	.39	.25	.37
IN.	.14	.12	.09	.09	.41	2.72	1.85	.70	.16	.45	.29	.42

CAL YR 1976 TOTAL 569690 MEAN 1557 MAX 18100 MIN 98 CFSM .73 IN 9.95
WTR YR 1977 TOTAL 425265 MEAN 1165 MAX 11100 MIN 130 CFSM .55 IN 7.43

04183500 MAUMEE RIVER AT ANTWERP, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND 5 DAY (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)
MAR 30...	1215	7580	475	7.6	10.5	9.4	84	3.6	210	100	59	14
JUN 08...	1710	228	890	8.9	19.5	20.0	220	5.9	320	110	79	29

DATE	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 30...	9.6	3.4	128	0	105	5.1	54	24	.1	7.0	234	6.9
JUN 08...	50	5.6	206	24	209	.5	130	66	.6	.1	486	.09

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 30...	.07	.19	.36	4	10	18	30	9	20	.0	40	--
JUN 08...	.48	.16	.34	2	20	6	30	3	10	.0	20	7.3

04184100 MAUMEE RIVER AT DEFIANCE, OH

LOCATION.--Lat 41°16'43", long 84°23'07", Defiance County, Hydrologic Unit 04100005, at waterworks on right bank at Defiance, about 300 ft (91 m) upstream from Tiffin River, and 1.8 mi (2.9 km) upstream from Auglaize River.

DRAINAGE AREA.--2,316 mi² (5,998 km²).

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1966 to current year.
pH: November 1973 to current year.
DISSOLVED OXYGEN: January 1966 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,350 micromhos Jan. 24, 1970; minimum, 210 micromhos Jan. 30, 1969, Feb. 8, 9, 1971.
pH: Maximum, 9.2 units Oct. 7, 1975; minimum, 6.6 units Nov. 26, 29, 1974.
WATER TEMPERATURES: Maximum, 32.0°C July 3, 1966; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during water years 1966 to 1968, 1973 to 1977; minimum, 0.2 mg/L Aug. 23, 1966.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,330 micromhos Feb. 18; minimum, 330 micromhos Mar. 6.
pH: Maximum, 9.1 units Oct. 18; minimum, 7.2 units Sept. 18.
WATER TEMPERATURES: Maximum, 31.5°C July 15; minimum, 0.0°C Jan. 21-31, Feb. 16-18.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during October, December, April, May and September; minimum, 0.4 mg/L Feb. 6-9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 15...	1215	3130	510	7.8	8.5	10.0	85	3.7	220	100	64	15
JUN 14...	1115	782	815	8.1	20.0	8.2	89	5.3	280	110	68	27

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 15...	14	4.2	146	0	120	3.7	67	28	.2	6.4	271	4.5
JUN 14...	39	4.6	209	0	171	2.7	120	58	.5	1.1	421	.52

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 15...	.05	.29	.20	2	10	17	30	9	20	.0	20	7.2
JUN 14...	.05	.24	.18	2	<10	9	20	4	30	.0	30	6.1

04184100 MAUMEE RIVER AT DEFIANCE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	840	807	750	741	879	873	1100	1100	1060	1040	483	447
2	804	759	790	750	909	870	1100	1070	1050	1050	474	405
3	747	657	810	795	960	909	1070	1050	1050	1040	402	375
4	684	672	813	804	960	951	1050	1020	1050	1040	369	342
5	690	648	820	813	960	948	1020	1020	1070	1050	369	348
6	666	618	819	792	966	960	1020	1020	1090	1070	357	330
7	615	591	804	792	957	936	1040	1020	1110	1090	357	333
8	684	597	810	804	933	924	1070	1040	1130	1110	384	360
9	717	687	804	792	945	930	1070	1050	1130	1090	384	378
10	729	714	837	804	933	912	1050	1040	1100	1050	384	378
11	726	678	843	840	912	906	1040	1040	1050	1020	387	381
12	702	594	846	831	906	900	1040	1030	1030	1010	420	387
13	627	465	831	813	909	897	1030	1020	1010	990	438	411
14	669	642	813	807	924	909	1010	1000	1030	1010	474	435
15	681	660	804	789	936	924	1010	1000	1030	993	507	474
16	666	642	789	780	948	936	1020	1010	1200	993	522	504
17	660	636	789	762	966	948	1030	1020	1310	1210	525	519
18	690	657	786	783	1000	966	1060	1030	1330	1310	561	522
19	792	702	795	786	1020	1010	1090	1070	1320	1280	561	510
20	822	792	786	780	1050	1010	1090	1060	1280	1230	528	477
21	816	744	780	771	1140	1050	1080	1070	1230	1150	507	468
22	741	687	777	768	1190	1140	1070	1040	1140	990	531	507
23	687	678	789	777	1220	1200	1040	1030	978	711	537	525
24	678	669	792	789	1210	1190	1030	1030	696	678	552	525
25	672	660	---	---	1190	1120	1040	1030	741	675	564	540
26	666	657	---	---	1110	1070	1060	1040	681	579	561	540
27	723	666	---	---	1080	1070	1070	1060	567	441	546	534
28	759	723	---	---	1090	1080	1070	1060	441	417	534	495
29	789	759	---	---	1110	1090	1060	1050	---	---	495	456
30	795	780	---	---	1110	1100	1050	1040	---	---	462	441
31	783	750	---	---	1100	1100	1050	1040	---	---	456	438
MONTH	840	465	846	741	1220	870	1100	1000	1330	417	564	330

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	480	459	599	587	---	---	540	345	630	576	660	600
2	480	471	602	570	---	---	450	378	642	627	672	636
3	480	465	617	575	556	400	450	348	645	630	675	651
4	483	450	617	536	645	444	390	348	666	633	651	532
5	447	429	602	545	647	410	438	393	681	564	732	630
6	460	441	623	584	703	451	474	438	651	528	726	702
7	483	471	590	566	723	708	537	477	621	531	702	651
8	504	477	602	590	749	722	561	531	726	603	786	555
9	501	492	629	602	744	723	621	564	633	582	558	537
10	516	492	647	626	812	734	651	624	579	555	609	558
11	543	516	656	650	802	757	624	597	579	546	642	612
12	608	543	674	656	819	777	633	624	543	504	642	630
13	629	608	674	653	830	791	627	615	600	435	551	600
14	653	629	665	653	790	726	639	615	483	423	615	585
15	659	650	692	668	774	726	666	627	480	456	717	582
16	683	659	686	665	723	669	660	576	585	486	720	645
17	692	683	686	662	696	642	---	---	588	480	711	519
18	689	683	716	665	672	633	---	---	531	453	534	453
19	731	686	665	629	654	624	---	---	564	471	543	474
20	731	704	647	620	693	681	---	---	678	567	522	495
21	722	689	623	605	696	684	---	---	690	648	546	522
22	740	626	629	611	729	684	---	---	645	615	561	531
23	685	365	653	623	717	675	---	---	630	615	537	522
24	---	---	756	600	675	669	---	---	612	588	525	519
25	467	443	725	644	684	666	---	---	624	600	546	528
26	491	455	---	---	672	669	---	---	633	624	570	546
27	521	491	---	---	687	630	582	561	621	597	597	573
28	545	521	---	---	700	670	567	558	594	564	612	600
29	540	539	---	---	703	684	579	570	573	561	627	612
30	590	551	---	---	681	507	579	564	576	570	639	630
31	---	---	---	---	---	---	585	573	603	573	---	---
MONTH	740	365	756	536	830	400	666	345	726	423	786	453
YEAR	1330	330										

04184100 MAUMEE RIVER AT DEFIANCE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.7	8.3	8.3	8.2	8.2	8.1	7.7	7.7	7.4	7.3	7.6	7.5
2	8.5	7.7	8.3	8.2	8.1	8.0	7.7	7.6	7.4	7.4	7.7	7.6
3	8.5	7.6	8.3	8.2	8.1	7.9	7.6	7.6	7.4	7.3	7.7	7.6
4	8.4	8.2	8.4	8.3	8.0	7.9	7.6	7.5	7.4	7.4	7.7	7.6
5	8.3	8.0	8.5	8.4	7.9	7.8	7.6	7.5	7.4	7.4	7.8	7.6
6	8.2	7.8	8.6	8.4	7.8	7.7	7.6	7.6	7.5	7.4	7.8	7.7
7	8.0	7.8	8.5	8.5	7.8	7.6	7.6	7.5	7.5	7.5	7.7	7.6
8	9.0	8.1	8.6	8.5	7.8	7.7	7.6	7.5	7.6	7.5	7.6	7.5
9	9.0	8.8	8.6	8.5	7.9	7.8	7.5	7.5	7.6	7.5	7.6	7.6
10	8.9	8.7	8.7	8.6	8.0	7.9	7.5	7.5	7.6	7.5	7.6	7.6
11	8.8	8.2	8.7	8.7	8.1	8.0	7.5	7.4	7.5	7.4	7.6	7.5
12	8.8	8.2	8.8	8.6	8.1	8.1	7.5	7.4	7.5	7.5	7.6	7.5
13	8.9	8.4	6.8	8.6	8.2	8.1	7.5	7.4	7.5	7.4	7.6	7.6
14	9.0	8.8	8.8	8.7	8.2	8.1	7.4	7.4	7.7	7.5	7.6	7.6
15	9.0	8.7	8.8	8.6	8.2	8.1	7.4	7.4	7.8	7.7	7.7	7.5
16	9.0	8.7	8.8	8.7	8.2	8.2	7.5	7.4	7.8	7.7	7.7	7.6
17	9.0	8.8	8.8	8.7	8.2	8.1	7.5	7.4	7.7	7.5	7.7	7.7
18	9.1	8.9	8.9	8.0	8.2	8.0	7.4	7.4	7.6	7.5	7.8	7.7
19	9.0	8.4	8.8	8.6	8.2	8.1	7.4	7.3	7.5	7.4	7.7	7.6
20	8.4	8.2	8.9	8.8	8.2	8.1	7.4	7.3	7.5	7.4	7.6	7.6
21	8.6	8.2	8.9	8.8	8.2	8.1	7.4	7.4	7.5	7.4	7.7	7.6
22	8.9	8.6	8.9	8.8	8.2	8.2	7.4	7.3	7.4	7.3	7.8	7.7
23	8.9	8.8	8.9	8.9	8.3	8.2	7.4	7.4	7.4	7.3	7.8	7.7
24	8.9	8.8	8.9	8.9	8.3	8.3	7.4	7.4	7.5	7.4	7.8	7.7
25	8.8	8.7	---	---	8.3	8.3	7.4	7.3	7.6	7.5	7.8	7.7
26	8.9	8.8	---	---	8.3	8.2	7.4	7.4	8.2	7.7	7.7	7.6
27	8.8	8.5	---	---	8.2	7.9	7.4	7.3	8.0	7.6	7.7	7.7
28	8.5	8.3	---	---	8.0	7.8	7.4	7.3	7.6	7.6	7.7	7.6
29	8.4	8.2	---	---	7.8	7.7	7.5	7.4	---	---	7.6	7.6
30	8.4	8.3	---	---	7.8	7.7	7.4	7.4	---	---	7.5	7.4
31	8.3	8.3	---	---	7.7	7.6	7.4	7.3	---	---	7.5	7.4
MONTH	9.1	7.6	8.9	8.2	8.3	7.6	7.7	7.3	8.2	7.3	7.8	7.4

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.5	7.4	7.8	7.7	---	---	7.8	7.3	8.0	7.5	8.7	8.4
2	7.6	7.5	7.8	7.8	---	---	7.3	7.3	8.0	7.8	8.6	7.9
3	7.6	7.5	7.9	7.8	8.5	8.2	7.3	7.3	8.2	7.8	8.4	7.9
4	7.5	7.5	7.9	7.7	8.4	8.1	7.3	7.3	8.3	8.0	8.7	8.4
5	7.6	7.5	7.7	7.7	8.4	7.9	7.3	7.3	8.2	8.0	8.6	7.8
6	7.6	7.5	7.7	7.7	8.0	7.6	7.3	7.3	8.0	7.8	8.0	7.7
7	7.7	7.6	7.7	7.7	8.3	7.9	7.4	7.3	8.1	7.6	8.3	7.9
8	7.8	7.7	7.7	7.7	8.3	8.1	7.5	7.4	8.0	7.5	8.4	7.9
9	7.8	7.7	7.9	7.7	8.7	8.2	7.6	7.5	7.5	7.4	8.7	8.4
10	7.7	7.6	7.9	7.9	8.6	8.4	7.9	7.6	7.6	7.4	8.9	8.7
11	7.7	7.6	8.0	7.9	8.6	8.2	7.9	7.7	7.7	7.5	9.0	8.7
12	7.9	7.6	8.1	7.9	8.5	8.2	8.1	7.8	7.7	7.5	8.7	8.5
13	7.9	7.9	8.1	8.0	8.6	8.3	8.2	7.9	7.5	7.3	8.7	8.4
14	8.0	7.9	8.2	8.0	8.6	8.4	8.0	7.9	7.5	7.3	9.0	8.5
15	8.1	7.9	8.5	8.1	8.6	8.2	8.2	7.7	7.6	7.4	8.9	7.8
16	8.2	8.0	8.8	8.4	8.5	8.1	8.1	7.9	7.7	7.5	7.7	7.3
17	8.5	8.1	8.7	8.4	8.5	7.9	---	---	7.7	7.7	7.5	7.4
18	8.7	8.3	8.7	8.1	8.2	7.8	---	---	7.8	7.7	7.4	7.2
19	8.6	8.4	8.6	7.6	8.4	7.9	---	---	8.1	7.8	7.6	7.4
20	8.7	8.4	8.4	7.9	8.4	8.0	---	---	8.0	7.8	7.7	7.6
21	8.7	8.5	8.3	7.8	8.4	8.1	---	---	7.8	7.7	7.7	7.6
22	8.6	8.4	8.4	7.8	8.3	7.9	---	---	7.9	7.7	7.7	7.6
23	8.5	7.5	8.5	7.7	8.4	8.1	---	---	7.9	7.8	7.7	7.6
24	---	---	8.3	7.8	8.4	8.1	---	---	8.0	7.8	7.7	7.6
25	7.5	7.5	8.1	7.5	8.5	8.0	---	---	8.1	7.9	7.8	7.6
26	7.5	7.5	---	---	8.5	7.9	---	---	8.4	8.1	7.9	7.7
27	7.5	7.5	---	---	8.4	7.8	8.5	8.3	8.5	8.1	8.0	7.9
28	7.7	7.6	---	---	8.2	7.6	8.5	8.2	8.5	8.2	8.1	7.9
29	7.7	7.7	---	---	8.4	7.7	8.3	7.9	8.4	8.1	8.1	8.0
30	7.8	7.7	---	---	8.3	7.9	8.1	7.8	8.5	8.0	8.1	8.0
31	---	---	---	---	---	---	7.8	7.5	8.8	8.5	---	---
MONTH	8.7	7.4	8.8	7.5	8.7	7.6	8.5	7.3	8.8	7.3	9.0	7.2
YEAR	9.1	7.2										

04184100 MAUMEE RIVER AT DEFIANCE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.5	16.0	6.0	5.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2	17.0	16.5	7.0	5.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
3	18.0	17.5	7.0	6.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4	19.5	17.5	6.5	6.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5	19.5	18.5	5.5	5.0	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5
6	19.5	17.0	5.0	4.5	0.5	0.5	0.5	0.5	0.5	0.5	1.5	1.0
7	17.0	14.5	5.0	4.0	0.5	0.5	0.5	0.5	0.5	0.5	2.0	1.5
8	15.0	13.5	4.0	3.0	0.5	0.5	0.5	0.5	0.5	0.5	2.5	2.0
9	14.5	13.5	3.5	2.5	0.5	0.5	0.5	0.5	0.5	0.5	3.5	2.5
10	13.5	13.0	4.0	3.5	0.5	0.5	0.5	0.5	0.5	0.5	4.5	3.5
11	14.0	13.0	4.0	3.5	0.5	0.5	0.5	0.5	0.5	0.5	6.0	4.5
12	15.0	13.5	3.5	2.5	0.5	0.5	0.5	0.5	0.5	0.5	8.0	6.0
13	16.0	15.0	2.5	1.5	0.5	0.5	0.5	0.5	0.5	0.5	8.5	8.0
14	15.5	14.0	2.5	1.5	0.5	0.5	0.5	0.5	0.5	0.5	9.0	8.0
15	15.0	13.5	2.0	1.5	0.5	0.5	0.5	0.5	0.5	0.5	10.0	8.5
16	13.5	12.0	2.0	1.0	0.5	0.5	0.5	0.5	0.5	0.0	9.5	9.0
17	12.0	10.5	2.0	1.5	0.5	0.5	0.5	0.5	0.0	0.0	9.0	7.5
18	12.5	9.5	2.5	2.0	0.5	0.5	0.5	0.5	0.5	0.0	7.0	6.0
19	9.5	8.5	3.5	2.5	0.5	0.5	0.5	0.5	0.5	0.5	6.0	5.5
20	9.0	8.5	3.0	2.5	0.5	0.5	0.5	0.5	0.5	0.5	5.5	4.5
21	8.5	8.0	3.0	2.0	1.0	0.5	0.5	0.0	0.5	0.5	5.5	4.5
22	8.0	7.0	2.0	1.5	1.0	0.5	0.5	0.0	0.5	0.5	5.0	4.0
23	7.0	6.0	1.5	1.0	0.5	0.5	0.0	0.0	0.5	0.5	5.0	4.0
24	7.5	6.0	1.0	0.5	0.5	0.5	0.0	0.0	0.5	0.5	5.0	4.0
25	8.0	7.5	---	---	0.5	0.5	0.0	0.0	0.5	0.5	5.5	4.0
26	7.5	6.5	---	---	0.5	0.5	0.0	0.0	0.5	0.5	6.0	4.5
27	6.5	5.0	---	---	0.5	0.5	0.0	0.0	0.5	0.5	7.0	5.5
28	5.5	4.5	---	---	0.5	0.5	0.0	0.0	0.5	0.5	8.5	7.0
29	5.5	4.0	---	---	0.5	0.5	0.5	0.0	---	---	10.0	8.5
30	6.0	5.5	---	---	0.5	0.5	0.5	0.0	---	---	11.5	10.0
31	6.0	6.0	---	---	0.5	0.5	0.5	0.0	---	---	11.5	11.0
MONTH	19.5	4.0	7.0	0.5	1.0	0.5	0.5	0.0	0.5	0.0	11.5	0.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	10.5	15.5	13.5	---	---	23.0	21.5	27.5	26.5	27.5	26.0
2	12.0	10.5	16.0	15.0	---	---	22.5	21.5	27.0	26.0	28.0	26.5
3	12.0	11.0	15.5	15.0	22.5	20.0	22.5	21.5	26.5	25.5	27.5	26.0
4	11.0	10.5	14.5	14.5	23.5	21.5	24.0	22.0	27.0	26.0	26.0	24.5
5	10.5	9.0	16.5	14.5	24.5	23.0	27.0	24.0	27.5	26.5	26.5	24.5
6	9.0	8.5	17.0	16.5	24.0	22.5	29.0	26.0	27.0	26.0	26.5	25.0
7	8.5	7.5	17.5	16.5	22.5	20.5	30.0	27.5	26.0	25.0	25.5	24.0
8	8.0	6.5	18.0	16.5	20.5	18.5	29.5	27.5	26.0	24.5	28.0	24.0
9	8.0	7.0	17.5	16.0	20.0	17.0	30.5	28.0	26.0	24.5	25.0	24.0
10	10.0	7.5	17.5	15.5	21.5	19.0	28.5	27.0	25.5	24.5	25.0	23.0
11	12.0	10.0	18.0	16.0	21.5	20.0	27.5	26.0	26.0	24.5	23.5	22.0
12	14.5	12.0	18.5	17.0	20.0	19.5	27.0	26.0	25.0	23.5	22.0	20.5
13	16.5	14.0	20.0	17.0	20.5	18.5	29.0	26.0	24.5	23.5	20.5	20.0
14	17.0	15.5	20.5	19.0	21.5	20.0	29.0	26.5	25.5	23.5	20.5	19.0
15	17.0	15.0	21.5	18.5	25.5	20.5	31.5	28.0	26.5	23.5	20.0	18.5
16	18.0	15.5	22.5	19.5	26.5	22.5	31.0	29.5	26.0	24.5	20.0	18.5
17	19.5	17.0	23.5	21.0	25.5	23.0	---	---	25.5	24.0	21.0	19.5
18	20.5	18.0	25.5	22.5	25.0	24.0	---	---	24.0	23.0	21.5	20.5
19	20.5	19.5	26.0	23.0	25.0	23.5	---	---	23.5	22.0	21.5	20.5
20	21.0	19.0	26.5	24.0	25.0	23.5	---	---	22.0	20.5	21.0	20.0
21	20.5	19.5	27.0	25.5	24.0	22.5	---	---	22.0	21.0	19.5	19.0
22	20.0	17.5	26.0	25.0	23.5	22.5	---	---	23.0	20.5	19.5	18.5
23	17.5	13.5	26.0	24.0	23.5	22.0	---	---	23.5	21.5	20.0	19.0
24	---	---	27.5	22.5	26.5	22.0	---	---	24.5	22.0	20.0	19.5
25	13.5	12.0	---	---	27.5	24.5	---	---	23.5	21.5	20.5	19.0
26	12.5	11.5	---	---	28.5	25.5	---	---	24.5	22.0	21.0	20.0
27	13.0	11.5	---	---	27.5	26.5	26.5	25.0	26.5	24.0	20.5	19.5
28	13.0	12.5	---	---	27.5	26.0	27.0	25.0	28.0	26.5	19.5	18.5
29	13.0	11.5	---	---	27.0	25.5	26.5	25.5	28.0	26.0	19.0	17.5
30	14.5	12.5	---	---	26.5	23.5	28.0	25.5	26.0	24.5	19.0	17.5
31	---	---	---	---	---	---	28.5	26.5	27.0	24.5	---	---
MONTH	21.0	6.5	27.5	13.5	28.5	17.0	31.5	21.5	28.0	20.5	28.0	17.5
YEAR	31.5	0.0										

04184100 MAUMEE RIVER AT DEFIANCE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.0	11.4	9.4	9.0	12.6	12.4	7.5	6.5	0.8	0.7	11.3	10.9
2	15.0	13.7	9.6	9.3	12.8	11.9	6.6	5.9	0.9	0.6	11.5	11.2
3	15.0	9.6	9.6	9.3	11.9	11.4	6.2	5.6	0.7	0.5	11.8	11.5
4	14.0	8.1	9.5	9.3	11.5	10.8	5.7	5.3	0.6	0.5	11.9	11.7
5	8.2	5.5	10.2	9.4	10.9	10.1	5.6	5.0	0.5	0.5	11.6	11.3
6	7.0	3.6	10.8	10.2	10.4	9.5	5.2	4.8	0.5	0.4	11.8	11.3
7	6.3	3.0	11.0	10.7	10.0	9.7	4.9	4.5	0.6	0.4	12.0	11.8
8	14.4	6.8	11.3	10.9	10.5	9.8	4.5	4.4	0.4	0.4	12.2	12.0
9	13.9	10.6	11.6	11.3	11.9	10.6	4.6	4.3	0.5	0.4	12.3	12.2
10	15.0	11.3	11.6	11.5	13.2	12.1	4.3	4.0	0.7	0.5	12.3	12.1
11	15.0	12.4	11.8	11.6	14.0	13.2	4.0	3.2	1.0	0.6	12.1	11.6
12	15.0	14.3	12.0	11.7	14.9	14.0	3.2	2.7	1.5	1.1	11.6	10.7
13	15.0	14.9	12.5	12.0	15.0	14.6	2.7	2.3	2.2	1.6	11.8	10.7
14	15.0	12.9	12.7	12.5	15.0	15.0	2.3	1.8	2.7	2.1	10.7	10.4
15	15.0	12.9	13.0	12.7	15.0	15.0	1.8	1.4	4.1	2.8	10.5	10.3
16	15.0	13.2	13.3	13.0	15.0	15.0	1.6	1.4	3.9	2.9	10.4	10.3
17	15.0	13.7	13.3	12.8	15.0	15.0	1.5	1.4	2.8	2.4	10.6	10.4
18	15.0	13.7	12.9	12.6	15.0	15.0	1.4	1.3	2.6	2.3	10.6	10.3
19	15.0	8.3	12.7	12.2	15.0	15.0	1.5	1.3	3.3	2.5	11.1	10.3
20	8.1	7.4	12.4	12.2	15.0	14.7	1.4	1.0	3.4	3.1	11.6	11.0
21	10.0	7.4	12.4	12.1	15.0	14.6	1.2	1.0	3.6	3.1	11.7	11.6
22	12.5	9.6	12.4	12.1	15.0	14.6	1.2	1.0	4.3	3.3	12.0	11.7
23	12.4	11.3	12.6	12.4	15.0	14.9	1.4	1.1	6.8	4.3	12.1	12.0
24	11.3	10.2	12.9	12.6	15.0	15.0	1.4	1.0	7.2	6.7	12.2	12.1
25	10.6	9.8	---	---	15.0	15.0	1.1	0.8	7.5	7.0	12.3	11.9
26	13.8	9.8	---	---	15.0	13.8	1.0	0.8	10.3	7.5	12.0	11.4
27	12.7	10.6	---	---	13.8	11.8	1.1	0.8	10.9	10.3	11.7	11.3
28	10.5	9.8	---	---	11.8	10.3	1.1	0.8	11.3	10.9	11.2	10.4
29	10.1	9.9	---	---	10.3	9.1	1.1	0.8	---	---	10.4	9.5
30	10.0	9.4	---	---	9.2	8.5	1.1	0.8	---	---	9.5	9.4
31	9.5	9.1	---	---	8.5	7.5	1.0	0.7	---	---	9.4	9.3
MONTH	15.0	3.0	13.3	9.0	15.0	7.5	7.5	0.7	11.3	0.4	12.3	9.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.6	9.4	8.5	8.1	---	---	5.7	4.0	6.1	3.0	12.9	8.7
2	9.6	9.4	8.3	8.1	---	---	4.4	2.1	5.9	4.1	12.0	6.2
3	9.6	9.1	8.3	7.9	14.6	11.6	4.6	4.4	7.5	5.1	8.4	4.9
4	9.4	9.3	8.2	7.8	14.4	12.0	4.7	4.4	7.9	6.0	12.4	7.7
5	9.7	9.2	7.8	7.6	12.5	8.1	4.3	3.8	7.2	5.3	10.3	6.3
6	10.3	9.7	7.6	7.2	8.1	5.7	3.9	3.7	6.0	4.4	7.5	5.0
7	10.8	10.4	7.2	7.1	9.2	6.5	3.8	3.5	7.5	4.8	9.8	6.2
8	11.1	10.9	7.1	7.0	8.7	7.1	4.1	3.6	5.8	3.8	11.5	7.7
9	11.3	11.1	7.8	7.0	12.2	7.3	4.7	3.8	4.8	3.7	12.4	9.2
10	11.2	10.7	8.1	7.7	12.0	9.0	7.0	4.5	5.4	3.8	12.8	10.1
11	10.7	10.2	8.8	7.9	11.5	8.2	6.8	5.2	6.1	4.7	15.0	11.9
12	10.2	9.3	9.1	7.8	10.8	6.8	8.3	5.6	5.8	4.5	15.0	13.7
13	9.3	8.7	9.2	7.8	13.2	8.2	9.1	6.0	4.5	3.3	15.0	11.0
14	8.8	8.2	9.7	7.9	14.2	8.2	8.1	6.1	4.6	3.4	15.0	9.7
15	10.2	8.8	13.4	8.2	13.4	9.6	9.9	5.5	5.4	4.4	14.8	6.6
16	11.1	8.8	15.0	10.1	10.5	8.3	8.6	6.4	6.2	4.8	6.4	5.6
17	13.6	8.8	15.0	11.0	9.2	6.1	---	---	6.2	5.6	6.5	6.0
18	15.0	9.9	15.0	11.3	8.4	5.4	---	---	6.6	5.8	6.0	5.5
19	13.5	9.9	15.0	11.9	9.8	6.0	---	---	8.4	6.6	6.1	5.5
20	15.0	9.0	15.0	13.2	8.8	5.9	---	---	7.8	6.3	6.2	5.8
21	14.9	9.7	15.0	11.7	9.6	5.5	---	---	6.2	5.5	6.2	6.0
22	12.7	9.4	13.1	8.6	8.5	5.6	---	---	6.7	5.5	6.6	6.2
23	9.0	7.0	12.7	6.9	8.1	6.3	---	---	7.5	5.8	6.7	6.6
24	---	---	13.7	9.6	9.9	6.1	---	---	7.9	6.2	6.7	6.6
25	7.5	6.7	---	---	9.4	6.6	---	---	9.1	6.6	6.9	6.5
26	8.2	7.4	---	---	9.5	4.8	---	---	11.2	7.7	7.3	6.6
27	8.4	8.2	---	---	9.5	5.4	12.3	10.0	12.0	8.5	7.7	6.8
28	8.4	8.2	---	---	9.7	3.2	10.1	7.4	11.5	8.2	8.2	7.1
29	8.6	8.4	---	---	12.5	4.4	8.8	5.3	10.4	7.1	8.3	7.5
30	8.5	8.0	---	---	9.8	5.7	6.9	4.3	11.7	6.4	8.4	7.6
31	---	---	---	---	---	---	4.8	3.2	14.0	9.0	---	---
MONTH	15.0	6.7	15.0	6.9	14.6	3.2	12.3	2.1	14.0	3.0	15.0	4.9
YEAR	15.0	0.4										

04184500 BEAN CREEK AT POWERS, OH

LOCATION.--Lat 41°40'39", long 84°13'56", in NE 1/4 sec. 24, T.9 S., R.1 E., Fulton County, Hydrologic Unit 04100006, on right bank at downstream side of bridge on U.S. Highway 20, 1 mi (2 km) east of Powers, 2.2 mi (3.5 km) upstream from Iron Creek, 3 mi (5 km) downstream from Silver Creek, and 5.2 mi (8.4 km) east of Fayette.

DRAINAGE AREA.--206 mi² (534 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1940 to current year.

REVISED RECORDS.--WSP 1307: 1948 (M), WSP 1912: Drainage area. WDR OH-76-2: 1975.

GAGE.--Water-stage recorder. Datum of gage is 722.57 ft (220.239 m) above mean sea level. Prior to Jan. 18, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good except those for Dec. 1 to Mar. 7, which are fair.

AVERAGE DISCHARGE.--37 years, 161 ft³/s (4.560 m³/s), 10.61 in/yr (269 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,250 ft³/s (120 m³/s) Apr. 29, 1956, gage height, 13.82 ft (4.212 m); minimum, 5.0 ft³/s (0.14 m³/s) Aug. 9, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gge height (ft)	Gge height (m)
Mar. 6	----	*2400	68.0	*12.00	3.658	Mar. 29	1415	1280	36.2	7.51	2.289

Minimum discharge: 9.0 ft³/s (0.25 m³/s) Aug. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	24	35	27	25	400	426	208	39	58	11	23
2	22	25	34	27	25	350	439	183	38	48	10	19
3	21	25	34	27	25	400	538	167	37	37	9.9	17
4	21	25	34	26	25	750	400	159	37	51	9.2	17
5	20	25	34	26	25	1500	466	163	38	61	13	17
6	27	25	34	26	25	2200	420	292	40	48	16	16
7	30	24	34	26	25	1500	340	257	41	37	20	14
8	34	24	35	26	25	812	300	181	40	32	23	14
9	30	23	36	25	27	525	260	147	43	33	20	13
10	28	25	37	25	30	428	220	130	47	28	35	12
11	27	28	38	25	34	360	190	121	47	24	53	12
12	26	28	38	25	31	323	180	113	45	27	45	11
13	25	27	37	25	28	347	166	107	45	23	35	15
14	24	26	36	25	26	303	153	102	44	21	26	19
15	24	26	35	25	25	262	143	95	41	27	21	21
16	25	25	36	25	24	224	136	90	38	29	20	23
17	24	26	36	25	24	187	129	86	37	23	19	23
18	23	26	36	25	24	172	124	80	37	22	17	27
19	22	28	36	25	24	169	120	75	34	23	16	53
20	23	26	35	26	24	185	118	72	31	20	15	76
21	23	26	35	27	25	195	117	68	29	18	17	55
22	23	25	34	27	27	243	118	63	27	16	19	43
23	22	25	33	26	32	230	638	60	26	15	17	36
24	25	27	32	25	60	220	978	56	24	15	40	33
25	26	27	33	25	140	215	562	55	31	15	28	30
26	26	26	29	25	320	227	506	51	27	15	20	33
27	25	34	28	25	520	252	379	48	23	15	17	55
28	24	44	27	25	470	655	299	46	23	13	16	72
29	24	39	27	25	---	1180	284	44	22	13	20	59
30	23	36	27	25	---	940	244	41	33	13	19	51
31	24	---	27	25	---	618	---	40	---	12	16	---
TOTAL	763	820	1039	792	2115	16388	9393	3400	1064	832	663.1	909
MEAN	24.6	27.3	33.5	25.5	75.5	529	313	110	35.5	26.8	21.4	30.3
MAX	34	44	38	27	520	2200	978	292	47	61	53	76
MIN	20	23	27	25	24	169	117	40	22	12	9.2	11
CFSM	.12	.13	.16	.12	.37	2.57	1.52	.53	.17	.13	.10	.15
IN.	.14	.15	.19	.14	.38	2.96	1.70	.61	.19	.15	.12	.16

CAL YR 1976 TOTAL 67867.0 MEAN 185 MAX 2500 MIN 11 CFSM .90 IN 12.26
WTR YR 1977 TOTAL 38178.1 MEAN 105 MAX 2200 MIN 9.2 CFSM .51 IN 6.89

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04184500 BEAN CREEK AT POWERS, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 31...	1140	656	530	7.9	10.0	9.5	84	1.9	240	89	72	15
JUN 09...	1100	42	710	8.0	13.5	7.8	74	2.5	320	69	87	24

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 31...	6.8	3.8	186	0	153	3.7	58	17	.2	7.1	272	3.7
JUN 09...	25	3.4	301	0	247	4.8	72	30	.3	8.7	399	1.2

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 31...	.04	.07	.27	3	<10	11	60	5	30	.0	90	--
JUN 09...	.06	.36	.63	1	20	24	60	0	50	.0	30	5.3

04185000 TIFFIN RIVER AT STRYKER, OH

LOCATION.--Lat 41°30'17", long 84°25'49", in NW 1/4 sec. 5, T.6 N., R.4 E., Williams County, Hydrologic Unit 04100006, on right bank 0.5 mi (0.8 km) downstream from bridge on State Highway 191 at west edge of Stryker, 0.6 mi (1.0 km) upstream from Penn Central Bridge, and 1.6 mi (2.6 km) downstream from Leatherwood Creek.

DRAINAGE AREA.--410 mi² (1,060 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to September 1928 (published as "near Stryker"), October 1940 to current year.

REVISED RECORDS.--WSP 1144: 1922-28. WSP 1387: 1925. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 685.1 ft (208.82 m) above mean sea level. Prior to Sept. 30, 1928, nonrecording gage at site 3.5 mi (5.6 km) downstream at different datum. Oct. 11, 1940, to Jan. 17, 1941, nonrecording gage and Jan. 18, 1941, to Sept. 30, 1953, water-stage recorder, at site 0.5 mi (0.8 km) downstream at same datum.

REMARKS.--Records poor prior to March 7, fair thereafter. Sediment data collected at this site 1969 to 1976.

AVERAGE DISCHARGE.--44 years, 309 ft³/s (8.751 m³/s), 10.23 in/yr (260 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,640 ft³/s (188 m³/s) Apr. 25, 1950, gage height, 15.45 ft (4.709 m); maximum gage height, 16.16 ft (4.926 m) May 1, 1956; minimum daily discharge, 3.9 ft³/s (0.11 m³/s) Aug. 30, 31, Sept. 1, 1953.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 16.0 ft (4.88 m), from floodmarks, discharge, 7,600 ft³/s (215 m³/s). Flood in 1937 reached a stage of 15.0 ft (4.57 m), from information by local resident, discharge, 6,000 ft³/s (170 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,050 ft³/s (30 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 7	0500	2500	70.8	13.39	4.081	Apr. 24	0400	*2790	79.0	*13.67	4.167

Minimum daily discharge, 15 ft³/s (0.42 m³/s) Aug. 4-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	35	64	28	28	540	1600	684	57	140	17	21
2	25	35	60	28	28	420	1460	498	55	216	16	20
3	23	35	56	28	28	380	1200	632	55	132	16	20
4	21	36	53	28	28	800	1130	713	53	87	15	20
5	19	35	50	28	28	1500	1100	756	53	193	15	20
6	33	36	48	28	28	2000	990	703	58	198	15	20
7	40	35	46	28	28	2500	869	634	65	119	16	20
8	50	36	44	28	28	2150	696	632	86	78	17	20
9	43	35	42	28	31	1840	498	461	71	59	18	19
10	40	35	41	28	35	1610	378	306	97	47	19	18
11	38	37	40	28	39	1320	320	246	90	39	20	17
12	36	40	39	28	46	1020	283	214	91	36	23	17
13	34	41	38	28	38	763	256	190	84	37	26	16
14	33	40	37	28	34	603	235	173	80	37	27	16
15	32	40	36	28	32	498	214	158	74	31	28	17
16	31	100	35	28	31	377	194	143	66	30	28	17
17	31	180	34	28	30	284	181	131	60	28	27	19
18	31	180	33	28	30	236	172	122	56	29	26	20
19	33	170	32	28	30	226	164	114	54	30	23	22
20	35	160	31	29	30	260	163	109	49	29	22	24
21	38	150	30	29	30	337	166	104	43	26	21	28
22	42	100	30	29	31	481	191	98	40	24	21	32
23	40	70	29	29	33	540	1190	91	37	24	21	34
24	45	75	29	28	60	536	2700	88	36	23	21	35
25	50	82	28	28	220	496	2560	82	37	21	22	35
26	46	90	28	28	450	476	2330	79	38	21	22	35
27	42	95	28	28	520	489	1990	73	44	19	22	38
28	39	100	28	28	600	704	1690	69	37	18	22	41
29	37	90	28	28	---	1200	1370	65	34	18	22	44
30	35	75	28	28	---	1510	1020	62	37	18	21	48
31	33	---	28	28	---	1730	---	59	---	17	21	---
TOTAL	1096	2268	1173	872	2574	27914	27410	8487	1735	1824	650	750
MEAN	35.4	75.6	37.8	28.1	91.9	900	914	274	57.8	58.8	21.0	25.0
MAX	50	180	64	29	600	2500	2700	756	97	216	28	48
MIN	19	35	28	28	28	226	163	59	34	17	15	16
CFSM	.09	.18	.09	.07	.22	2.20	2.23	.67	.14	.14	.05	.06
IN.	.10	.21	.11	.08	.23	2.53	2.49	.77	.16	.17	.06	.07

CAL YR 1976 TOTAL 117319 MEAN 321 MAX 4770 MIN 11 CFSM .78 IN 10.64
WTR YR 1977 TOTAL 76753 MEAN 210 MAX 2700 MIN 15 CFSM .51 IN 6.96

04185000 TIFFIN RIVER AT STRYKER, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 30...	1720	1550	470	7.6	12.0	8.2	76	2.7	210	100	61	14
JUN 14...	2030	75	760	7.9	19.0	7.6	81	1.4	330	92	92	25

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 30...	8.9	4.4	132	0	108	5.3	64	29	.1	6.8	253	7.3
JUN 14...	21	3.6	294	0	241	5.9	73	42	.3	7.5	409	2.7

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 30...	.08	.13	.31	5	<10	16	50	10	30	.0	50	--
JUN 14...	.05	.06	.24	2	20	7	10	2	60	.3	50	7.5

04185300 TIFFIN RIVER AT EVANSPORT, OH

LOCATION.--Lat 41°25'38", long 84°23'22", in SE 1/4 sec. 33, T.6N., R.4E., Defiance County, Hydrologic Unit 04100006, on left bank at upstream side of bridge on State Highway 191, 0.4 mi (0.6 km) east of center of Evansport, 1,300 ft (396 m) downstream from Brush Creek, and 6.5 mi (10.5 km) downstream from Beaver Creek.

DRAINAGE AREA.--541 mi² (1,401 km²).

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to current year.
pH: June 1968 to current year.
WATER TEMPERATURES: June 1968 to current year.
DISSOLVED OXYGEN: June 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,120 micromhos Oct. 11, 1970; minimum, 170 micromhos Feb. 23, 1971.
pH: Maximum, 9.1 units Mar. 16-18, 1969; minimum, 6.4 units Jan. 30, 1974.
WATER TEMPERATURES: Maximum, 31.0°C Sept. 3, 4, 1973; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher Jan. 8-10, 1972; minimum, 1.2 mg/L Jan. 19, 20, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,040 micromhos Feb. 11; minimum, 252 micromhos Mar. 8.
pH: Maximum, 8.4 units on several days during November, June and July; minimum, 7.2 units Jan. 17.
WATER TEMPERATURES: Maximum recorded, 30.0°C July 20; minimum recorded, 0.0 °C Nov. 23, 24, Feb. 21, 22, 24-28.
DISSOLVED OXYGEN: Maximum, 14.1 mg/L Dec. 19; minimum, 1.2 mg/L Jan. 19, 20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 15...	1545	809	580	7.8	7.0	9.7	80	2.7	260	110	76	17
JUN 14...	1820	85	800	7.8	19.0	7.4	79	2.4	320	86	84	26

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 15...	13	4.3	178	0	146	4.5	68	35	.2	6.8	308	5.0
JUN 14...	25	4.6	286	0	235	7.3	77	44	.3	7.5	412	3.7

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 15...	.08	.24	.14	1	10	5	20	7	30	.0	20	7.2
JUN 14...	.05	.04	.31	5	30	21	20	2	50	.0	40	8.1

04185300 TIFFIN RIVER AT EVANSPORT, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	693	681	810	795	780	738	900	891	849	843	447	408
2	696	672	798	789	762	744	891	882	858	849	471	450
3	672	663	789	783	789	759	885	876	861	855	489	465
4	696	672	789	777	819	789	888	876	870	861	438	291
5	696	669	807	789	846	819	906	888	873	870	303	288
6	684	666	822	798	855	846	906	900	876	873	315	300
7	687	669	798	780	852	843	906	897	876	864	306	258
8	774	696	783	777	852	840	897	894	864	861	273	252
9	783	756	774	762	861	846	894	879	885	867	327	276
10	777	717	774	768	867	855	879	873	948	864	378	300
11	717	708	777	771	873	864	882	870	1040	867	426	381
12	711	690	786	777	[illegible]	867	879	873	996	876	477	429
13	693	687	777	765	[illegible]	858	879	870	918	888	537	477
14	708	693	768	756	870	840	879	876	963	909	558	537
15	714	705	765	756	870	849	879	873	957	945	582	558
16	723	714	771	753	891	855	870	855	942	912	600	585
17	726	723	792	750	912	891	858	852	915	882	618	603
18	---	---	777	756	[illegible]	912	873	855	945	879	621	606
19	---	---	747	615	930	906	885	873	927	894	642	621
20	---	---	633	618	903	882	885	882	894	873	681	636
21	---	---	636	624	---	---	885	879	888	876	705	669
22	---	---	636	627	---	---	882	876	915	864	705	681
23	---	---	660	639	---	---	873	852	885	684	693	645
24	---	---	705	660	---	---	855	846	675	435	675	639
25	---	---	675	663	---	---	873	846	447	381	690	675
26	---	---	693	672	---	---	888	876	438	387	678	672
27	---	---	702	693	---	---	885	873	384	348	675	648
28	807	774	744	705	---	---	873	867	402	354	642	534
29	831	804	750	738	876	870	867	855	---	---	528	498
30	843	819	789	753	888	873	855	852	---	---	528	501
31	819	807	---	---	900	888	855	849	---	---	522	477
MONTH	843	663	822	615	930	738	906	846	1040	348	705	252

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	501	474	621	594	450	423	---	---	808	793	660	630
2	540	501	---	---	459	411	---	---	802	787	678	657
3	555	540	---	---	489	393	---	---	802	790	714	666
4	555	537	585	564	492	399	---	---	796	781	765	717
5	570	543	600	579	489	441	---	---	802	760	744	726
6	576	561	627	600	450	420	---	---	764	731	726	714
7	570	555	648	606	459	399	655	640	839	743	774	711
8	609	570	585	546	450	405	655	645	815	698	750	723
9	630	609	639	588	459	396	650	640	705	650	750	717
10	648	630	672	642	480	399	645	599	720	687	756	738
11	660	648	687	672	435	420	609	581	678	477	756	729
12	669	660	693	687	447	420	691	570	573	408	762	741
13	672	666	699	693	474	420	580	566	594	450	756	717
14	684	672	702	696	---	---	598	591	651	591	792	705
15	687	681	705	699	---	---	608	594	627	609	819	789
16	687	675	705	684	---	---	618	612	615	579	792	693
17	690	684	684	681	---	---	641	622	621	576	708	666
18	693	681	---	---	---	---	679	648	648	618	711	666
19	690	681	---	---	---	---	664	649	663	642	714	654
20	693	678	---	---	---	---	671	668	669	648	687	651
21	705	690	---	---	---	---	702	685	678	666	702	684
22	705	414	---	---	---	---	720	703	699	678	702	669
23	390	255	504	471	---	---	754	720	720	699	672	654
24	309	255	522	450	---	---	771	745	711	696	660	651
25	402	315	510	444	---	---	775	749	762	699	672	654
26	438	405	483	429	---	---	788	760	765	723	690	666
27	492	438	501	414	---	---	774	756	726	702	864	546
28	531	495	510	414	---	---	786	756	708	696	621	564
29	570	531	477	426	---	---	804	777	702	696	699	603
30	594	573	486	417	---	---	802	781	708	696	705	684
31	---	---	507	420	---	---	811	790	699	657	---	---
MONTH	705	255	705	414	492	393	811	566	839	408	864	546
YEAR	1040	252										

04185300 TIFFIN RIVER AT EVANSPORT, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	8.0	7.9	7.8	8.0	7.9	7.6	7.6	7.5	7.3	7.4	7.3
2	8.1	7.9	7.9	7.9	7.9	7.9	7.6	7.6	7.5	7.4	7.5	7.3
3	8.0	7.9	7.9	7.9	7.9	7.9	7.6	7.5	7.5	7.4	7.4	7.4
4	8.0	7.9	7.9	7.9	7.9	7.8	7.6	7.4	7.5	7.4	7.5	7.3
5	7.9	7.9	7.9	7.9	8.0	7.8	7.5	7.4	7.5	7.3	7.5	7.4
6	7.9	7.8	8.0	7.9	7.8	7.7	7.4	7.4	7.5	7.3	7.4	7.3
7	7.9	7.8	8.0	7.9	7.8	7.7	7.4	7.4	7.5	7.3	7.4	7.4
8	7.9	7.8	8.0	7.9	7.7	7.7	7.4	7.4	7.5	7.3	7.5	7.4
9	8.0	7.9	8.1	8.0	7.7	7.6	7.4	7.3	7.6	7.4	7.5	7.4
10	8.0	7.9	8.1	8.0	7.7	7.6	7.4	7.3	7.7	7.4	7.5	7.4
11	8.1	7.9	8.1	8.1	7.7	7.5	7.3	7.3	7.6	7.5	7.5	7.4
12	8.0	7.9	8.2	8.1	7.7	7.6	7.3	7.3	7.6	7.5	7.5	7.4
13	7.9	7.8	8.3	8.1	7.7	7.6	7.3	7.3	7.5	7.5	7.5	7.4
14	7.9	7.8	8.3	8.2	7.7	7.6	7.4	7.3	7.6	7.5	7.6	7.5
15	8.0	7.8	8.3	8.2	7.7	7.6	7.3	7.3	7.5	7.5	7.7	7.6
16	8.0	7.9	8.3	8.2	7.7	7.6	7.3	7.3	7.5	7.4	7.7	7.6
17	8.0	7.9	8.3	8.2	7.8	7.6	7.3	7.2	7.5	7.4	7.8	7.7
18	---	---	8.4	8.3	7.9	7.7	7.5	7.3	7.5	7.4	7.9	7.8
19	---	---	8.3	8.2	8.0	7.8	7.4	7.4	7.5	7.4	7.9	7.8
20	---	---	8.2	8.1	8.0	7.9	7.4	7.3	7.5	7.4	7.9	7.9
21	---	---	8.2	8.1	---	---	7.4	7.3	7.5	7.4	7.9	7.8
22	---	---	8.2	8.2	---	---	7.4	7.3	7.6	7.5	7.9	7.8
23	---	---	8.2	8.0	---	---	7.4	7.3	7.7	7.5	7.9	7.8
24	---	---	8.0	7.9	---	---	7.4	7.3	7.6	7.5	7.9	7.8
25	---	---	8.1	8.0	---	---	7.4	7.3	7.5	7.4	7.9	7.8
26	---	---	8.0	7.9	---	---	7.4	7.3	7.5	7.4	7.9	7.8
27	---	---	7.9	7.8	---	---	7.3	7.3	7.5	7.4	7.9	7.8
28	8.1	8.0	8.0	7.9	---	---	7.4	7.3	7.5	7.4	7.8	7.6
29	8.1	8.0	8.1	8.0	7.7	7.6	7.3	7.3	---	---	7.6	7.5
30	8.0	7.9	8.0	8.0	7.8	7.5	7.4	7.3	---	---	7.5	7.4
31	7.9	7.8	---	---	7.9	7.6	7.4	7.3	---	---	7.5	7.4
MONTH	8.1	7.8	8.4	7.8	8.0	7.5	7.6	7.2	7.7	7.3	7.9	7.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.6	7.5	7.8	7.6	8.3	8.2	7.9	7.6	8.3	8.2	7.9	7.7
2	7.6	7.5	7.8	7.5	8.4	8.2	8.0	7.8	8.3	8.2	7.8	7.7
3	7.7	7.6	---	---	8.4	8.3	8.0	7.7	8.3	8.1	7.9	7.8
4	7.7	7.6	7.6	7.6	8.4	8.3	7.9	7.8	8.3	8.1	7.9	7.9
5	7.8	7.7	7.6	7.5	8.4	8.2	7.9	7.8	8.3	8.1	8.0	7.8
6	7.8	7.7	7.6	7.6	8.4	8.2	7.9	7.6	8.2	8.0	8.0	7.9
7	7.9	7.8	7.7	7.6	8.4	8.3	7.9	7.7	8.0	8.0	8.0	7.8
8	7.9	7.8	7.7	7.5	8.4	8.3	7.9	7.8	8.0	8.0	8.1	7.9
9	7.9	7.8	7.8	7.7	8.4	8.2	7.9	7.9	8.1	7.9	8.1	8.0
10	7.9	7.8	7.8	7.7	8.3	8.2	8.0	7.9	8.0	7.9	8.1	8.0
11	7.9	7.8	7.8	7.7	8.3	8.2	8.1	8.0	7.9	7.8	8.2	8.1
12	7.8	7.7	7.8	7.7	8.2	8.2	8.1	8.0	7.8	7.6	8.2	8.1
13	7.8	7.8	7.8	7.6	8.2	8.1	8.1	8.0	7.9	7.6	8.2	8.1
14	7.9	7.7	7.8	7.7	8.3	8.2	8.2	8.1	7.9	7.8	8.2	8.0
15	8.0	7.8	7.8	7.7	8.3	8.1	8.2	8.1	7.9	7.8	8.1	8.0
16	8.1	7.8	7.8	7.7	8.2	8.1	8.2	8.1	7.9	7.8	8.0	7.9
17	8.1	7.9	7.8	7.7	8.2	7.8	8.1	8.0	8.0	7.8	7.9	7.8
18	8.1	7.9	7.8	7.7	8.3	7.9	8.1	8.0	8.0	8.0	7.8	7.7
19	8.0	7.9	7.8	7.7	8.2	8.2	8.2	7.9	8.1	8.0	7.8	7.7
20	8.0	7.8	7.8	7.7	8.3	8.1	8.2	8.0	8.1	8.0	7.9	7.8
21	7.9	7.8	7.8	7.7	8.3	8.2	8.2	8.1	8.1	8.0	7.9	7.9
22	7.9	7.6	7.8	7.6	8.4	8.2	8.2	8.1	8.1	8.0	7.9	7.9
23	7.5	7.4	8.1	7.6	8.4	8.3	8.3	8.1	8.1	8.0	8.0	7.9
24	7.4	7.3	8.2	8.1	8.4	8.3	8.3	8.2	8.1	8.0	7.9	7.8
25	7.4	7.3	8.1	8.1	8.4	8.2	8.3	8.1	8.1	8.0	7.9	7.8
26	7.4	7.4	8.2	8.1	8.4	8.2	8.4	8.2	8.1	8.0	7.9	7.8
27	7.5	7.4	8.2	8.1	8.4	8.2	8.4	8.2	8.0	7.9	7.9	7.6
28	7.6	7.5	8.2	8.1	8.3	8.1	8.4	8.2	8.0	7.9	7.7	7.6
29	7.7	7.6	8.3	8.1	8.3	8.1	8.4	8.2	8.0	7.9	7.9	7.7
30	7.7	7.6	8.3	8.1	8.2	7.8	8.3	8.2	8.0	7.9	7.9	7.8
31	---	---	8.3	8.2	---	---	8.3	8.1	8.0	7.8	---	---
MONTH	8.1	7.3	8.3	7.5	8.4	7.8	8.4	7.6	8.3	7.6	8.2	7.6
YEAR	8.4	7.2										

04185300 TIPPIN RIVER AT EVANSPORT, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.0	12.5	5.5	2.5					---	---	0.5	0.0
2	16.0	12.5	6.0	3.5					---	---	1.0	0.0
3	16.5	13.5	6.0	4.5					---	---	0.5	0.0
4	17.5	13.5	5.0	4.0					---	---	0.5	0.0
5	18.0	15.0	4.5	3.5					---	---	0.5	0.0
6	17.0	14.0	5.0	3.0					---	---	1.0	0.0
7	13.5	12.0	4.0	3.0					---	---	1.0	0.5
8	13.0	11.0	3.0	1.5					---	---	2.5	0.0
9	12.0	11.0	3.5	1.5					---	---	4.0	2.0
10	12.0	10.0	3.5	2.0					---	---	6.0	3.5
11	13.0	10.5	3.5	2.0					---	---	7.0	5.0
12	14.5	10.5	2.5	1.0					---	---	8.0	6.5
13	15.0	13.0	3.0	1.0					---	---	8.0	7.5
14	13.5	11.0	2.5	0.5					1.0	0.5	8.0	7.0
15	13.0	11.0	2.5	0.5					1.0	0.5	8.5	6.5
16	11.0	9.5	2.5	0.5					1.0	0.5	8.5	7.0
17	9.5	8.0	2.0	0.5					0.5	0.0	7.5	6.0
18	---	---	2.5	1.0					0.5	0.5	5.5	4.0
19	---	---	3.5	1.5					1.0	0.5	5.0	2.5
20	---	---	3.5	1.5					0.5	0.5	3.5	2.5
21	---	---	2.5	1.5					0.5	0.0	4.5	2.5
22	---	---	1.5	1.0					1.0	0.0	4.0	2.5
23	---	---	1.0	0.0					1.0	0.5	4.0	2.5
24	---	---	0.5	0.0					0.5	0.0	4.0	2.5
25	---	---	2.5	0.5					0.5	0.0	4.5	2.5
26	---	---	5.5	2.0					0.5	0.0	5.5	3.5
27	---	---	6.0	4.5					0.5	0.0	6.5	4.5
28	4.5	3.0	4.5	1.5					0.5	0.0	8.0	6.0
29	5.0	2.0	---	---					---	---	11.5	8.0
30	4.5	4.0	---	---					---	---	13.0	10.5
31	5.0	4.0	---	---					---	---	12.5	11.0
MONTH	18.0	2.0	6.0	0.0					1.0	0.0	13.0	0.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	9.5	14.5	12.0	21.5	18.5	21.0	19.0	25.0	23.0	26.0	23.5
2	11.5	9.5	---	---	19.0	17.0	21.5	19.5	24.0	21.0	26.0	24.0
3	11.0	10.0	---	---	20.0	15.5	21.5	19.0	24.5	21.5	25.0	23.5
4	10.5	9.0	13.0	12.5	21.0	16.5	24.0	21.0	26.0	22.5	23.5	21.5
5	9.5	7.0	16.0	12.5	21.0	19.0	26.5	23.0	26.0	23.5	25.0	22.0
6	7.0	6.0	17.0	15.0	20.0	18.0	27.0	24.5	25.0	24.0	24.0	22.5
7	6.0	5.0	17.5	16.0	19.0	16.0	27.5	25.5	25.0	23.5	23.5	21.0
8	6.5	5.0	16.5	15.0	[illegible]	15.5	28.0	25.0	24.5	23.0	23.0	20.5
9	7.5	5.5	15.0	13.5	17.5	14.0	28.0	25.5	24.0	22.5	23.5	20.5
10	10.5	6.5	14.5	12.0	18.5	14.5	26.0	24.0	24.0	22.5	22.0	20.0
11	13.5	9.0	15.5	11.5	17.5	16.0	24.0	23.0	25.0	22.0	20.5	17.5
12	16.0	12.0	16.0	12.5	16.0	15.5	25.0	23.0	22.0	20.5	18.5	17.0
13	18.0	14.0	18.0	14.5	17.5	15.0	27.0	23.0	22.5	20.5	18.5	17.0
14	17.5	15.5	18.0	16.0	19.0	16.5	26.5	23.0	24.5	21.5	19.0	17.0
15	17.5	14.5	19.0	15.5	21.5	17.0	29.0	24.5	24.5	21.5	18.0	16.5
16	17.5	15.0	20.0	16.0	23.0	18.5	28.0	26.0	24.0	22.0	19.0	16.5
17	18.0	15.5	20.5	18.0	23.5	20.5	28.0	24.5	24.0	22.0	20.5	18.0
18	19.0	16.0	22.0	19.0	24.0	21.5	27.5	25.5	22.0	19.5	21.0	19.5
19	18.0	17.0	23.5	20.0	24.0	21.0	29.0	25.0	20.0	18.5	21.0	20.0
20	19.5	17.0	24.5	21.0	23.0	20.5	30.0	26.5	20.0	18.0	20.0	18.5
21	19.5	18.0	25.0	21.5	23.0	19.5	29.5	27.5	19.5	18.5	18.5	17.5
22	18.5	15.0	24.5	22.0	22.5	19.5	27.0	24.5	21.0	18.5	19.0	17.5
23	14.5	11.5	24.0	21.5	23.0	19.0	26.0	22.5	22.0	19.5	19.0	17.5
24	12.5	11.0	25.0	22.0	23.5	20.5	25.0	22.5	22.0	20.0	19.5	18.0
25	12.0	11.0	25.0	21.5	24.5	20.5	26.5	23.5	21.5	19.0	20.0	18.5
26	13.0	10.0	24.0	21.5	25.0	21.5	25.0	21.5	22.5	18.5	20.0	19.0
27	14.5	11.0	24.0	20.0	24.5	21.5	24.0	20.5	25.0	21.0	19.0	18.5
28	14.0	12.0	24.0	20.0	25.0	22.0	24.0	20.5	26.5	23.5	18.5	17.5
29	13.5	11.0	23.0	21.0	24.5	22.0	23.5	21.5	25.5	23.5	17.5	16.0
30	13.5	11.0	22.5	19.0	23.0	20.0	25.5	21.5	24.5	22.0	18.0	16.0
31	---	---	23.0	19.5	---	---	26.0	23.5	25.5	21.5	---	---
MONTH	19.5	5.0	25.0	11.5	25.0	14.0	30.0	19.0	26.5	18.0	26.0	16.0
YEAR	30.0	0.0										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04185300 TIFFIN RIVER AT EVANSPORT, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.4	7.2	7.9	7.4	11.3	10.5	6.8	6.1	2.2	2.0	10.5	9.9
2	7.1	6.7	8.2	7.9	10.8	10.3	6.1	5.5	2.4	2.0	10.3	10.0
3	6.9	6.6	8.2	7.8	11.3	10.6	5.5	4.7	2.3	2.1	9.9	8.9
4	7.0	6.4	8.3	7.8	11.1	10.3	4.7	3.8	2.4	2.1	11.3	9.7
5	6.9	6.4	8.4	8.2	10.3	9.9	4.0	3.6	3.0	2.1	11.5	11.2
6	6.7	5.8	8.7	8.3	10.2	9.5	4.1	3.6	2.3	2.0	11.5	11.1
7	6.5	5.7	8.8	8.4	10.0	9.3	3.9	3.4	2.3	2.0	11.8	11.1
8	7.2	6.3	9.3	8.5	9.5	8.1	3.5	3.2	2.3	2.1	11.9	11.8
9	8.3	7.2	9.6	9.3	10.1	9.0	3.3	3.0	2.4	2.1	11.8	11.4
10	7.9	7.4	9.6	9.1	10.2	9.3	3.1	2.6	2.6	2.2	11.3	10.8
11	8.4	7.5	9.3	8.8	11.1	9.3	2.6	2.3	3.7	2.4	10.8	10.4
12	7.9	7.4	10.0	9.2	11.8	10.1	2.5	2.3	4.5	3.0	10.4	10.2
13	7.5	6.7	10.4	9.8	12.1	10.6	2.6	2.4	---	---	10.2	10.1
14	7.1	6.3	10.6	10.1	12.7	10.9	2.4	2.2	6.0	5.9	10.7	10.2
15	7.9	6.5	10.8	10.4	13.0	11.4	2.2	2.0	5.8	5.2	10.8	10.1
16	8.1	7.0	10.8	10.5	12.8	11.7	2.3	1.9	5.4	4.8	10.6	10.1
17	8.2	7.3	10.7	10.4	12.6	10.6	1.9	1.6	5.1	4.2	10.5	10.2
18	---	---	10.5	10.2	13.4	11.4	1.7	1.5	5.1	4.4	10.6	9.9
19	---	---	10.1	9.7	14.1	11.8	1.5	1.2	5.1	4.0	11.3	10.1
20	---	---	10.7	9.5	13.8	12.3	1.3	1.2	5.8	4.6	11.6	11.3
21	---	---	10.5	10.2	---	---	1.6	1.4	6.3	4.9	11.5	11.1
22	---	---	10.7	10.4	---	---	1.9	1.6	7.3	5.4	11.1	10.9
23	---	---	11.0	10.5	---	---	2.1	1.7	9.3	7.0	11.4	11.0
24	---	---	11.0	10.6	---	---	2.5	2.0	10.2	9.3	11.5	11.1
25	---	---	10.8	10.5	---	---	3.2	2.1	10.3	9.8	11.4	11.1
26	---	---	10.8	10.1	---	---	3.3	2.7	10.3	9.6	11.3	11.0
27	---	---	10.1	9.5	---	---	2.7	2.2	10.6	10.3	11.0	10.7
28	9.5	9.4	10.9	9.5	---	---	2.3	2.1	10.8	10.5	10.7	9.6
29	9.5	9.2	11.7	10.7	9.6	9.0	2.2	2.0	---	---	9.5	8.7
30	9.2	8.6	11.9	11.2	9.5	7.7	2.0	1.8	---	---	8.7	8.4
31	8.6	7.4	---	---	7.7	6.8	2.1	1.8	---	---	8.4	8.1
MONTH	9.5	5.7	11.9	7.4	14.1	6.8	6.8	1.2	10.8	2.0	11.9	8.1

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.6	8.1	8.8	8.5	7.0	6.4	6.7	6.0	6.6	5.6	6.6	6.0
2	8.9	8.5	8.5	8.0	8.0	6.7	6.5	6.2	7.2	5.8	6.5	5.9
3	9.2	8.9	---	---	8.6	7.2	6.4	6.2	7.1	5.8	6.7	5.9
4	9.1	8.9	8.7	8.4	9.0	7.3	6.2	6.0	7.0	5.8	7.4	6.4
5	9.7	9.1	8.7	8.3	7.9	6.9	6.0	5.9	6.8	5.2	8.1	6.5
6	10.1	9.6	8.3	8.0	7.8	6.4	6.0	5.1	6.3	4.9	7.8	6.6
7	10.5	10.1	8.0	7.7	8.5	7.0	5.5	5.1	5.5	4.8	7.8	6.7
8	10.5	10.3	8.1	7.7	8.0	7.2	5.4	5.3	6.0	5.0	8.5	7.0
9	10.5	10.2	8.5	8.1	8.1	7.4	5.6	5.3	5.9	5.4	8.5	7.3
10	10.2	9.9	8.6	8.4	8.0	7.3	6.0	5.5	5.7	5.3	8.8	7.3
11	9.8	9.4	8.7	8.5	7.7	7.3	6.1	5.8	6.3	5.3	9.4	7.8
12	9.4	8.2	8.5	8.1	7.5	7.2	6.2	5.8	6.1	5.5	9.8	8.2
13	8.6	7.9	8.1	7.7	7.6	7.2	6.3	5.6	6.2	5.7	9.4	8.3
14	9.1	7.9	7.8	7.4	7.5	7.3	6.4	5.6	6.2	5.8	10.0	7.9
15	10.2	8.3	7.9	7.4	7.5	7.1	6.6	5.4	6.2	5.9	9.2	8.2
16	10.7	8.5	8.1	7.4	7.2	6.8	5.8	5.2	6.3	6.0	8.8	7.7
17	11.0	8.8	8.0	6.9	6.8	6.1	6.1	5.1	6.6	6.0	7.8	7.2
18	10.6	8.5	7.6	6.9	6.5	6.0	5.9	5.0	7.1	6.5	7.3	6.8
19	9.5	8.3	7.8	6.7	6.5	5.9	6.4	4.9	8.1	6.9	6.8	6.7
20	9.3	7.6	7.1	6.3	6.9	5.8	6.7	4.9	8.2	7.3	7.3	6.6
21	8.6	7.7	6.3	5.7	7.5	6.2	6.1	4.8	7.8	7.4	7.8	7.3
22	7.9	7.0	5.9	5.5	8.1	6.5	7.0	5.0	8.5	7.2	8.1	7.8
23	8.3	7.8	6.1	5.4	8.6	6.8	7.7	5.6	8.6	7.2	8.1	7.9
24	8.4	7.7	5.9	5.6	8.6	6.5	7.4	5.8	8.3	7.1	7.9	7.4
25	7.9	7.4	6.0	5.5	8.1	6.3	7.5	5.4	8.9	7.4	7.6	7.3
26	8.2	7.5	6.2	5.4	8.2	5.9	7.6	5.8	8.6	7.5	7.4	7.2
27	8.2	8.0	6.3	5.8	8.1	6.0	8.1	6.3	7.8	6.9	7.4	6.5
28	8.2	7.9	6.6	6.0	7.8	6.0	7.9	6.5	7.5	6.4	7.1	6.8
29	8.5	8.1	6.9	5.9	7.6	5.6	7.6	6.2	6.8	6.0	7.8	6.9
30	8.8	8.5	7.5	6.2	6.9	5.6	7.2	5.8	6.9	6.2	7.9	7.7
31	---	---	7.5	6.4	---	---	6.8	5.5	7.1	6.4	---	---
MONTH	11.0	7.0	8.8	5.4	9.0	5.6	8.1	4.8	8.9	4.8	10.0	5.9
YEAR	14.1	1.2										

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH

LOCATION.--Lat 40°56'55", long 84°15'58", in SE 1/4 sec. 15, T.1 S., R.5 E., Putnam County, Hydrologic Unit 04100007, on left bank 200 ft (61 m) upstream from bridge on U. S. Highway 224, 3.5 mi (5.6 km) northeast of Fort Jennings, 6 mi (10 km) upstream from Ottawa River, and 7.3 mi (11.7 km) downstream from Jennings Creek.

DRAINAGE AREA.--332 mi^2 (860 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1921 to December 1935. October 1940 to current year.

REVISED RECORDS.--WSP 744: 1932. WSP 974: 1930(M). WSP 1307: 1922-24(M), 1926-27(M), 1929(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 713.6 ft (217.51 m) above mean sea level. Prior to Oct. 6, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, which are fair. Beginning Jan. 4, 1971, water was diverted at a point 24.3 mi (39.1 km) upstream from station into Lake Bresler. Storage in Lake Bresler is available for low-flow augmentation and water supply of city of Lima, in Ottawa River basin. Net withdrawal totaled 3,229 mil gal (12.222 hm^3), equivalent to a mean withdrawal of 13.7 ft^3/s (0.39 m^3/s). No releases have been made for low-flow augmentation. Some diversion from Grand Lake to Auglaize River basin through Miami and Erie Canal into Jennings. Creek at a point 9.2 mi (14.8 km) upstream from station. Annual figures of runoff are considered to be within 10 percent of natural yield. Sediment data collected at this site 1970 to 1974.

AVERAGE DISCHARGE.--51 years, 281 ft^3/s (7.958 m^3/s), 11.49 in/yr (292 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 12,000 ft^3/s (340 m^3/s) Jan. 23, 1959; maximum gage height, 20.30 ft (6.187 m) Jan. 23, 1959, from floodmark (ice jam); minimum daily discharge, 4.9 ft^3/s (0.14 m^3/s) Oct. 7, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,030 ft^3/s (57.5 m^3/s) Apr. 4, gage height, 9.77 ft (2.978 m), no peak above base of 2,700 ft^3/s (76.5 m); maximum gage height, 10.73 ft (3.271 m) Feb. 28, ice jam; minimum daily discharge, 7.4 ft^3/s (0.21 m^3/s) Jan. 17-19, ice effect.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	64	17	8.4	8.6	1100	283	107	25	265	14	22
2	16	60	16	8.2	8.8	450	445	111	22	225	12	21
3	14	54	15	8.2	9.0	274	1650	152	20	216	14	24
4	13	56	14	8.0	9.2	628	1800	418	17	154	16	20
5	13	55	13	8.6	9.4	1570	878	1050	16	116	13	18
6	12	53	13	8.6	9.8	1070	504	757	16	67	21	24
7	13	52	13	8.6	11	432	344	401	18	42	22	24
8	17	47	13	8.4	13	316	269	269	16	39	21	23
9	16	46	13	8.2	15	261	219	196	26	36	22	22
10	16	45	13	8.0	17	166	184	127	34	31	22	20
11	16	48	13	7.8	19	114	164	71	53	30	28	17
12	16	49	13	7.8	23	103	145	51	69	26	47	15
13	16	46	13	7.6	26	106	129	58	46	22	44	32
14	19	47	12	7.6	30	340	118	76	35	20	47	76
15	19	48	12	7.6	33	247	109	71	26	17	50	46
16	21	61	12	7.6	35	151	99	61	20	19	36	154
17	25	47	11	7.4	28	108	91	54	16	19	27	576
18	32	41	11	7.4	23	534	85	43	21	22	23	676
19	45	41	11	7.4	20	1740	83	47	26	20	20	377
20	49	38	11	7.8	17	1250	77	42	26	21	22	216
21	53	30	11	8.4	15	616	78	38	26	18	26	100
22	47	21	11	9.0	14	437	56	35	23	28	30	60
23	49	23	11	8.6	25	991	471	31	19	20	31	44
24	52	25	10	8.6	460	1270	512	31	19	15	25	38
25	57	23	10	8.4	1310	741	290	31	20	15	29	26
26	54	24	10	8.4	1160	454	208	25	21	17	28	27
27	55	25	10	9.0	1100	318	169	24	19	18	24	39
28	64	24	9.6	9.2	1500	686	147	28	29	22	23	34
29	56	23	9.0	9.0	---	1450	135	31	46	20	23	31
30	53	19	8.8	8.8	---	906	118	29	43	20	25	28
31	60	---	8.6	8.6	---	416	---	27	---	16	24	---
TOTAL	1007	1235	368.0	255.2	5948.8	19237	9852	4492	813	1608	809	2830
MEAN	32.5	41.2	11.9	8.23	212	621	328	145	27.1	51.9	26.1	94.3
MAX	64	64	17	9.2	1500	1740	1800	1050	69	265	50	676
MIN	12	19	8.6	7.4	8.6	100	56	24	16	15	12	15
CFSM	.10	.12	.04	.03	.64	1.87	.99	.44	.08	.16	.08	.28
IN.	.11	.14	.04	.03	.67	2.16	1.10	.50	.09	.18	.09	.32

CAL YR 1976 TOTAL 92456.9 MEAN 253 MAX 6140 MIN 5.2 CFSM .76 IN 10.36
WTR YR 1977 TOTAL 48455.0 MEAN 133 MAX 1800 MIN 7.4 CFSM .40 IN 5.43

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04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1969 to current year.
pH: November 1968 to current year.
WATER TEMPERATURES: February 1969 to current year.
DISSOLVED OXYGEN: November 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.- Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,690 micromhos Jan. 23, 1977; minimum, 150 micromhos Feb. 20, 1971.
pH: Maximum, 9.8 units July 22, 1970; minimum, 5.9 units July 18, 1972.
WATER TEMPERATURES: Maximum, 33.0°C July 20, 1977; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during 1969-74, 1976-77; minimum, 1.6 mg/L July 10, 1974.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,690 micromhos Jan. 23; minimum, 372 micromhos Feb. 25.
pH: Maximum, 9.7 units Nov. 12; minimum, 7.2 units Feb. 21, 22, Apr. 23.
WATER TEMPERATURES: Maximum, 33.0°C July 20; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during November, April to July; minimum, 2.1 mg/L on Feb. 4, 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 14...	1200	388	780	8.0	9.0	9.4	81	2.3	330	150	87	28
JUN 07...	1900	17	1040	8.7	20.0	14.0	150	5.7	400	120	96	39

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 14...	27	3.9	225	0	[illegible]	3.6	110	51	.3	6.9	425	4.3
JUN 07...	56	4.6	294	22	278	1.1	150	81	.8	.1	595	.01

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 14...	.06	.40	.38	2	20	72	60	7	30	.0	20	8.1
JUN 07...	.00	.02	.89	4	10	15	40	7	60	.0	58	6.9

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1160	1060	1220	1190	1350	1310	1620	1590	1630	1620	458	398
2	1070	1030	1250	1220	1300	1280	1590	1550	1630	1630	516	453
3	1050	1020	1250	1220	1310	1290	1550	1540	1630	1600	540	521
4	1050	1030	1220	1160	1320	1300	---	---	1600	1590	540	467
5	1080	1050	1170	1160	1340	1320	1530	1530	1590	1580	486	452
6	1090	1060	1200	1170	1390	1340	1550	1530	1600	1590	498	469
7	1110	1080	1240	1200	1460	1390	1570	1550	1600	1590	560	501
8	1120	1100	1250	1210	1490	1460	1600	1570	1590	1580	606	563
9	1130	1110	1240	1230	1490	1470	1620	1600	1600	1590	656	609
10	1200	1130	1250	1240	1480	1450	1620	1600	1590	1580	680	659
11	1210	1140	1250	1220	1460	1450	1590	1570	1580	1570	699	677
12	1130	1030	1220	1170	1500	1460	1570	1570	1560	1510	711	684
13	1050	1020	1170	1120	1550	1500	1600	1570	1510	1450	717	692
14	1070	1040	1130	1090	1570	1510	1610	1600	1510	1450	767	656
15	1100	1070	1100	1050	1530	1490	1610	1600	1460	1380	725	675
16	1120	1100	1090	1060	1500	1480	1610	1600	1410	1390	686	669
17	1160	1130	1110	1100	1510	1490	1620	1610	1300	1290	693	683
18	1180	1160	1110	1090	1530	1480	1640	1630	1200	1180	689	515
19	1190	1170	1110	1090	1480	1400	1660	1650	1170	1060	542	443
20	1190	1170	1120	1090	1400	1330	1660	1660	1050	1000	489	420
21	1210	1190	1120	1100	1470	1400	1660	1660	1020	963	566	494
22	1210	1180	1160	1120	1540	1480	1680	1660	962	869	594	570
23	1190	1180	1180	1160	1540	1520	1690	1680	866	783	614	497
24	1210	1190	1210	1190	1550	1520	1680	1650	815	464	495	462
25	1210	1100	1220	1190	1530	1510	1650	1620	446	372	542	485
26	1160	1080	1200	1190	1510	1450	1620	1590	434	384	575	510
27	1200	1160	1240	1200	1460	1430	1600	1590	461	420	599	576
28	1250	1200	1260	1240	1480	1440	1630	1600	411	389	585	495
29	1250	1200	1330	1260	1550	1480	1630	1620	---	---	486	470
30	1200	1190	1370	1340	1590	1550	1620	1610	---	---	509	450
31	1200	1190	---	---	1620	1590	1620	1610	---	---	578	513
MONTH	1250	1020	1370	1050	1620	1280	1690	1530	1630	372	767	398

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	624	570	800	780	1020	1000	860	630	1100	1090	951	911
2	636	546	790	783	1020	1000	662	618	1110	1100	959	914
3	539	416	789	768	1020	1010	806	665	1120	1110	959	912
4	432	399	765	606	1020	993	692	618	1140	1120	987	962
5	519	438	686	557	1010	986	696	666	1140	1110	1010	980
6	576	522	629	596	999	990	665	608	1110	1080	1020	972
7	615	578	636	627	1010	999	635	626	1100	1080	1030	1020
8	645	617	665	636	1020	1010	665	629	1120	1100	1050	1030
9	674	647	693	665	1030	1010	783	666	1100	1020	1050	1050
10	696	675	725	693	1030	1000	789	713	1040	1020	1060	1050
11	738	696	---	---	1100	951	759	728	1060	965	1080	1060
12	753	734	---	---	995	959	738	698	1010	963	1090	1070
13	762	752	---	---	1040	1000	719	696	1010	942	1080	729
14	773	764	---	---	1040	993	738	705	1030	953	930	731
15	774	758	---	---	1020	989	807	746	1030	986	1020	747
16	776	746	798	786	1010	995	884	812	1020	999	851	720
17	788	752	807	788	1020	1010	924	887	1010	1000	906	431
18	795	756	815	792	1030	1020	944	929	1020	1000	528	480
19	789	756	848	807	1030	978	933	923	1000	965	524	503
20	804	788	837	804	978	893	981	932	980	965	582	525
21	824	804	864	843	886	852	981	926	998	956	602	584
22	813	636	885	861	863	843	921	906	947	905	657	606
23	636	548	909	885	866	846	915	908	918	873	702	659
24	660	612	920	908	878	855	957	918	942	786	728	707
25	702	662	911	860	878	864	999	959	777	735	764	729
26	734	704	989	878	899	879	1020	984	806	759	803	767
27	771	737	930	902	912	891	1010	981	827	809	846	810
28	791	773	948	920	959	912	1090	1020	858	828	860	840
29	786	760	969	939	1020	959	1110	1090	870	858	903	863
30	789	771	995	968	1020	849	1090	1070	881	863	935	906
31	---	---	1000	980	---	---	1090	1070	906	882	---	---
MONTH	824	399	1000	557	1100	843	1110	608	1140	735	1090	431
YEAR	1690	372										

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.6	8.2	8.5	7.9	8.7	8.5	8.2	8.0	7.5	7.4	7.5	7.3
2	8.6	8.5	8.1	8.0	8.6	8.5	8.0	8.0	7.6	7.5	7.6	7.4
3	8.6	8.5	8.2	7.9	8.6	8.5	8.0	7.9	7.5	7.4	7.7	7.6
4	8.6	8.4	8.5	8.2	8.6	8.4	8.0	7.9	7.5	7.5	7.7	7.4
5	8.7	8.4	8.6	8.3	8.5	8.3	8.1	7.9	7.5	7.4	7.4	7.4
6	8.7	8.4	8.7	8.2	8.4	8.1	8.0	7.9	7.4	7.3	7.5	7.4
7	8.8	8.7	9.0	8.3	8.2	8.1	8.0	7.9	7.4	7.3	7.6	7.5
8	8.9	8.4	9.3	8.4	8.2	8.1	8.0	7.9	7.5	7.4	7.8	7.6
9	8.5	8.3	8.8	8.3	8.2	8.1	---	---	7.5	7.4	7.8	7.8
10	8.6	8.1	8.8	8.4	8.1	8.1	---	---	7.5	7.4	7.8	7.7
11	8.4	8.0	9.4	8.8	8.2	8.0	---	---	7.6	7.4	7.8	7.6
12	8.2	8.0	9.7	9.3	8.1	8.0	---	---	7.5	7.5	7.7	7.6
13	8.3	7.9	9.6	9.2	8.1	8.1	---	---	7.4	7.3	7.6	7.5
14	8.5	8.2	9.6	9.2	8.1	8.1	---	---	7.5	7.4	7.8	7.5
15	8.5	8.4	9.5	9.1	8.2	8.1	---	---	7.5	7.4	7.9	7.7
16	8.8	8.3	9.1	9.0	8.2	8.1	---	---	7.5	7.4	7.9	7.7
17	8.8	8.4	9.0	8.8	8.2	8.1	---	---	7.5	7.4	7.9	7.7
18	9.0	8.5	9.0	8.9	8.2	8.1	7.7	7.4	7.5	7.4	7.8	7.4
19	8.9	8.6	9.1	8.9	8.2	8.1	7.8	7.6	7.5	7.3	7.6	7.4
20	8.7	8.5	9.1	8.9	8.3	8.1	7.7	7.7	7.4	7.3	7.6	7.5
21	9.1	8.7	9.0	8.9	8.3	8.2	7.8	7.7	7.3	7.2	7.8	7.6
22	9.4	8.8	9.0	8.9	8.2	8.1	7.8	7.7	7.5	7.2	7.8	7.5
23	9.4	8.5	9.0	8.9	8.3	8.2	7.7	7.6	7.6	7.4	7.8	7.6
24	8.5	8.0	8.8	8.7	8.2	8.2	7.7	7.7	7.5	7.3	7.7	7.5
25	8.4	8.0	8.8	8.6	8.2	8.2	7.7	7.7	7.4	7.3	7.8	7.6
26	8.7	8.0	8.7	8.6	8.2	8.1	7.7	7.6	7.5	7.4	7.8	7.5
27	8.9	8.0	8.7	8.5	8.2	8.1	7.5	7.5	7.4	7.3	7.8	7.7
28	9.1	8.0	9.5	8.7	8.2	8.1	7.6	7.5	7.4	7.3	7.7	7.5
29	8.9	8.0	9.5	9.3	8.2	8.1	7.5	7.4	---	---	7.6	7.5
30	8.2	8.1	9.4	8.7	8.2	8.0	7.4	7.4	---	---	7.6	7.5
31	8.2	8.0	---	---	8.1	8.0	7.4	7.4	---	---	7.7	7.6
MONTH	9.4	7.9	9.7	7.9	8.7	8.0	8.2	7.4	7.6	7.2	7.9	7.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.8	7.5	8.3	8.0	8.7	8.4	---	---	8.7	8.5	8.9	8.4
2	7.8	7.6	8.1	7.8	8.9	8.7	---	---	8.7	8.5	8.8	8.2
3	7.5	7.3	7.9	7.8	8.9	8.7	---	---	8.6	8.5	8.2	8.0
4	7.5	7.4	7.8	7.4	8.8	8.6	---	---	8.6	8.3	8.2	8.1
5	7.6	7.5	7.4	7.4	8.7	8.5	---	---	8.5	8.4	8.2	8.1
6	7.7	7.6	7.6	7.4	8.7	8.4	7.9	7.7	8.4	8.1	8.2	8.1
7	7.8	7.6	7.7	7.5	8.8	8.6	7.8	7.7	8.1	8.0	8.2	8.1
8	7.9	7.8	7.8	7.6	8.7	8.6	7.9	7.6	8.1	7.9	8.2	8.0
9	8.0	7.8	7.9	7.7	8.8	8.4	8.1	7.6	8.0	7.9	8.4	8.1
10	8.1	7.9	8.0	7.8	8.8	8.4	8.6	7.9	8.2	8.0	8.5	8.3
11	8.0	7.8	---	---	8.6	8.1	8.3	8.0	8.2	8.1	8.7	8.3
12	8.0	7.9	---	---	8.4	8.1	8.7	7.9	8.1	8.0	8.6	8.4
13	8.1	7.9	---	---	8.6	8.1	9.1	8.5	8.0	7.9	8.5	8.0
14	8.2	8.0	---	---	8.7	8.2	9.1	8.9	8.2	7.9	8.2	7.9
15	8.5	8.1	---	---	8.9	8.4	9.0	8.7	8.3	8.0	8.1	7.9
16	8.7	8.3	8.5	8.5	9.0	8.7	8.8	8.7	8.3	8.1	8.0	7.9
17	8.8	8.4	8.7	8.4	8.9	8.8	8.8	8.5	8.5	8.1	8.0	7.5
18	8.9	8.5	8.8	8.5	8.9	8.6	8.6	8.4	8.4	8.2	7.8	7.7
19	8.8	8.5	8.7	8.5	9.0	8.7	8.4	8.1	8.5	8.1	7.8	7.7
20	8.7	8.4	8.6	8.3	9.1	8.8	8.3	8.1	8.4	8.2	7.7	7.7
21	8.6	8.3	8.5	8.2	9.1	8.8	8.2	7.8	8.2	8.0	7.8	7.7
22	8.4	7.7	8.7	8.1	9.1	8.9	8.1	8.0	8.2	8.1	7.9	7.8
23	7.7	7.2	8.7	8.3	9.2	8.9	8.1	7.9	8.1	8.0	7.9	7.7
24	7.5	7.3	8.5	8.3	9.1	8.9	8.1	7.9	8.1	7.9	7.8	7.7
25	7.7	7.5	8.7	8.3	9.0	8.8	8.3	7.9	8.2	7.9	8.1	7.8
26	7.9	7.6	8.8	8.4	9.0	8.7	8.8	8.2	8.2	7.8	8.2	8.0
27	7.9	7.8	8.8	8.5	8.9	8.7	8.8	8.4	8.6	8.0	8.2	8.0
28	7.9	7.8	8.7	8.4	---	---	8.5	8.1	8.6	8.2	8.3	8.0
29	8.0	7.8	8.7	8.3	---	---	8.9	8.3	8.6	8.2	8.4	8.1
30	8.2	7.9	8.5	8.2	---	---	9.0	8.7	8.7	8.1	8.4	8.1
31	---	---	8.7	8.2	---	---	8.9	8.7	8.9	8.2	---	---
MONTH	8.9	7.2	8.8	7.4	9.2	8.1	9.1	7.6	8.9	7.8	8.9	7.5
YEAR	9.7	7.2										

04186500 AUGLAIZE RIVER NEAR FORT JENNINGS, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.0	14.0	6.0	3.0	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.5
2	18.0	14.5	7.0	4.0	0.5	0.0	0.5	0.0	0.5	0.5	0.5	0.5
3	18.5	15.5	7.0	5.0	1.0	0.5	0.5	0.5	0.5	0.0	1.5	0.5
4	19.0	15.5	5.0	4.0	1.0	0.0	0.5	0.0	1.0	0.5	2.5	1.0
5	20.0	17.0	4.0	3.0	1.0	0.5	0.5	0.0	0.5	0.0	2.5	2.5
6	19.0	15.0	5.0	2.5	1.0	0.5	0.5	0.0	0.5	0.0	4.0	2.5
7	14.5	12.5	4.5	2.5	1.0	0.0	0.5	0.0	0.5	0.0	4.0	3.5
8	14.5	12.0	3.5	1.0	0.5	0.0	0.5	0.0	0.5	0.0	6.0	3.0
9	13.5	11.5	4.0	1.5	0.5	0.0	0.5	0.0	1.0	0.5	8.5	5.5
10	13.0	10.5	4.0	2.5	0.0	0.0	0.5	0.0	1.0	0.5	10.0	7.0
11	14.0	11.0	4.0	3.0	1.0	0.0	0.5	0.0	1.0	0.5	12.0	8.5
12	15.0	11.0	3.0	2.0	0.5	0.0	0.5	0.0	1.0	0.5	12.5	11.0
13	16.5	14.0	3.0	1.0	1.0	0.0	0.5	0.0	0.5	0.5	12.0	10.0
14	14.0	11.0	2.5	1.0	1.5	0.0	0.5	0.5	1.0	0.5	10.5	9.0
15	14.5	12.0	3.0	1.0	1.0	0.0	0.5	0.0	1.0	0.5	12.5	9.0
16	12.0	10.0	3.0	1.0	0.5	0.0	1.0	0.0	1.0	0.0	12.0	10.5
17	10.5	8.5	3.5	1.5	0.5	0.0	0.5	0.0	0.5	0.0	10.5	8.0
18	9.0	6.0	4.0	2.0	1.5	0.0	0.5	0.0	1.0	0.5	7.5	5.0
19	8.0	7.0	5.0	3.5	1.5	0.0	1.0	1.0	1.0	0.5	6.0	4.0
20	7.5	6.5	4.0	2.5	1.0	0.0	1.0	0.5	1.0	0.5	5.5	4.0
21	7.0	5.5	3.0	2.0	0.5	0.0	1.0	0.5	0.5	0.5	6.5	4.0
22	6.5	4.0	2.5	1.5	0.5	0.0	1.0	0.5	1.0	0.5	6.5	4.0
23	5.5	4.0	2.0	1.0	0.5	0.0	1.0	0.5	1.0	0.5	5.5	3.5
24	7.5	5.5	1.0	0.5	1.0	0.0	1.0	0.5	1.0	0.5	5.5	3.0
25	7.5	7.0	2.5	0.5	0.5	0.0	1.0	0.5	0.5	0.5	6.5	4.0
26	7.0	5.0	6.0	2.5	0.5	0.0	0.5	0.0	0.5	0.5	8.0	5.0
27	5.5	3.5	7.0	5.5	0.5	0.0	0.5	0.0	0.5	0.5	9.5	7.5
28	5.0	2.5	5.0	2.0	0.5	0.0	0.5	0.0	0.5	0.5	10.5	9.5
29	6.0	2.5	1.5	0.0	0.5	0.0	0.0	0.0	---	---	13.5	10.0
30	5.5	4.0	1.5	0.0	0.5	0.0	0.5	0.0	---	---	14.5	12.0
31	6.0	4.5	---	---	0.5	0.0	0.5	0.0	---	---	14.0	10.5
MONTH	20.0	2.5	7.0	0.0	1.5	0.0	1.0	0.0	1.0	0.0	14.5	0.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.5	9.5	17.5	13.0	23.5	20.0	23.0	21.0	27.0	24.0	28.5	25.0
2	13.0	11.5	18.0	16.0	21.5	18.0	24.0	20.5	26.5	22.0	28.5	26.0
3	12.0	10.0	17.0	16.0	23.0	17.5	24.5	22.0	27.0	23.0	27.0	24.5
4	11.5	10.5	16.0	14.5	24.0	19.0	27.0	23.5	28.0	24.0	26.0	22.5
5	10.5	7.5	18.0	14.0	24.0	21.5	30.0	26.0	29.0	25.5	26.5	23.5
6	7.5	6.5	18.0	17.0	23.5	19.5	31.5	27.0	28.0	26.0	25.5	23.5
7	7.5	6.0	18.5	16.5	20.5	17.0	32.0	28.5	27.0	25.0	25.0	22.0
8	9.5	6.0	19.0	16.0	19.0	16.5	31.0	27.5	26.5	24.5	25.0	21.5
9	10.5	6.5	17.5	14.0	21.0	15.5	31.5	27.5	26.0	24.0	25.5	22.0
10	14.0	9.0	16.5	13.0	22.5	17.0	29.0	25.5	25.5	24.0	24.5	21.0
11	16.0	13.0	---	---	21.5	18.5	27.0	24.0	27.5	24.0	22.0	18.0
12	18.5	14.5	---	---	19.0	18.0	28.0	25.0	26.5	22.5	20.5	18.0
13	19.5	16.0	---	---	21.0	17.5	30.5	25.5	26.0	23.0	19.5	18.5
14	18.5	16.0	---	---	22.5	19.0	30.5	25.5	27.0	23.5	20.0	17.5
15	18.5	14.5	---	---	25.0	19.5	32.5	28.5	27.5	24.0	18.5	17.5
16	19.5	14.5	22.0	20.5	26.5	21.5	31.5	29.0	26.5	24.5	19.0	18.0
17	21.0	16.5	24.0	20.0	28.0	24.5	31.0	26.5	26.5	24.0	21.0	19.0
18	22.0	18.0	25.0	21.0	27.0	24.5	30.5	28.0	24.5	21.0	21.5	20.5
19	21.0	19.5	27.0	22.0	27.0	22.5	32.0	27.0	23.0	20.0	22.0	21.0
20	20.5	18.5	28.0	23.0	26.0	23.0	33.0	28.5	22.0	19.0	21.0	19.0
21	20.0	18.5	27.5	23.0	25.5	21.0	32.0	29.0	21.5	20.0	19.0	17.5
22	19.0	15.0	26.5	22.5	24.0	21.0	29.5	25.5	23.0	19.5	19.0	16.0
23	15.0	11.5	25.5	22.5	25.0	20.5	28.5	24.0	24.0	20.5	20.0	17.5
24	12.0	10.5	24.5	22.5	26.0	22.5	28.0	24.0	23.0	21.0	20.5	19.0
25	11.0	10.0	26.5	23.0	27.5	24.0	29.0	26.0	23.5	19.5	71.5	18.5
26	13.0	9.0	26.0	22.0	28.5	23.5	26.5	22.5	25.0	19.5	21.5	19.5
27	15.5	11.0	26.0	21.0	26.5	24.0	26.5	22.0	27.0	23.5	20.5	18.0
28	15.0	11.0	27.0	21.5	28.0	24.5	27.0	22.0	28.5	25.0	19.5	17.0
29	13.5	9.5	26.5	23.0	27.0	23.5	26.0	24.0	27.0	24.5	18.0	15.5
30	15.5	11.0	26.0	21.0	25.0	23.0	28.0	23.5	26.0	22.5	19.5	16.5
31	---	---	25.5	21.5	---	---	28.0	25.0	27.5	23.0	---	---
MONTH	22.0	6.0	28.0	13.0	28.5	15.5	33.0	20.5	29.0	19.0	28.5	15.5
YEAR	33.0	0.0										

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.4	8.0	9.6	8.2	14.2	11.9	10.2	9.5	3.2	2.8	12.4	11.7
2	12.2	7.2	10.2	8.6	12.6	10.8	9.9	9.1	2.8	2.3	12.5	11.0
3	12.2	7.2	9.9	8.3	12.3	11.1	9.5	8.8	2.6	2.3	12.6	11.9
4	12.3	7.2	10.0	8.4	---	---	8.9	8.2	2.5	2.1	11.9	11.3
5	12.7	7.0	11.0	9.1	---	---	9.6	8.1	2.4	2.1	12.2	11.8
6	9.9	6.0	11.9	9.7	---	---	10.0	8.6	2.6	2.2	12.6	12.2
7	9.1	5.2	11.9	10.1	12.6	11.8	10.2	9.0	2.8	2.5	12.6	12.3
8	11.0	6.5	12.9	10.5	13.4	12.0	9.6	8.3	3.0	2.7	12.8	12.1
9	9.1	6.7	13.1	11.2	13.7	12.7	8.7	7.5	2.8	2.6	12.4	11.6
10	8.2	6.2	14.5	11.3	13.3	12.5	7.8	7.0	3.0	2.5	11.5	10.7
11	8.0	5.7	15.0	13.6	13.7	12.0	6.9	6.7	4.7	2.9	10.6	10.0
12	8.3	5.7	15.0	15.0	12.9	11.8	6.7	6.1	5.7	4.5	9.9	9.2
13	9.0	5.5	15.0	15.0	13.5	12.3	6.7	6.2	6.3	5.1	9.2	8.5
14	10.5	6.1	15.0	14.2	13.8	12.4	6.5	5.7	6.7	5.8	10.2	8.7
15	9.2	7.7	15.0	12.3	13.8	12.5	5.6	5.2	7.1	6.2	10.4	9.9
16	8.9	7.0	15.0	13.7	13.6	12.5	5.4	4.7	8.3	6.9	10.5	9.6
17	10.0	7.5	15.0	12.4	13.4	12.0	4.8	4.5	9.1	7.8	10.5	9.5
18	11.6	8.6	15.0	13.0	13.8	12.0	4.5	4.1	7.9	6.7	11.1	10.4
19	10.9	9.6	15.0	13.0	14.0	12.3	4.3	4.1	7.4	6.3	11.7	10.9
20	9.6	8.3	15.0	13.3	13.3	11.8	4.0	3.6	6.7	5.8	11.8	11.4
21	11.7	8.3	15.0	14.7	13.4	12.3	3.8	3.3	6.5	5.4	12.4	11.8
22	11.7	9.2	15.0	13.3	14.3	12.7	3.8	3.3	7.5	5.6	12.7	11.1
23	10.7	9.5	15.0	12.9	14.4	13.1	3.7	3.2	8.1	6.6	12.7	12.0
24	9.3	8.0	15.0	12.8	14.8	13.5	3.7	3.4	10.2	7.7	12.6	12.4
25	8.0	6.8	15.0	11.9	14.7	13.2	3.9	3.4	10.7	10.3	12.6	12.3
26	8.7	6.7	12.4	10.3	14.6	13.1	4.1	3.5	11.9	10.7	12.3	10.5
27	9.0	7.7	12.5	8.7	13.4	12.0	4.1	3.7	12.0	11.8	12.0	10.6
28	9.3	8.1	14.1	9.3	12.1	10.8	4.1	3.2	12.3	12.0	10.6	9.6
29	9.7	8.3	14.6	10.6	12.0	10.7	3.2	2.4	---	---	9.6	9.3
30	9.4	8.5	15.0	12.2	11.9	10.5	2.8	2.3	---	---	9.3	9.0
31	9.0	8.1	---	---	10.7	10.0	3.2	2.9	---	---	9.8	8.9
MONTH	13.4	5.2	15.0	8.2	14.8	10.0	10.2	2.3	12.3	2.1	12.8	8.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.1	9.8	10.4	8.6	11.3	5.4	4.5	3.9	7.8	4.1	12.1	5.7
2	9.8	8.9	8.6	7.0	14.1	5.9	4.6	4.4	8.7	4.5	9.3	5.0
3	9.3	9.1	8.1	6.7	12.7	7.3	12.0	4.5	8.6	4.5	6.4	4.0
4	9.4	9.2	7.7	7.1	12.1	6.3	7.3	4.4	9.6	4.4	6.5	4.7
5	10.5	9.3	7.6	7.2	10.1	4.7	7.6	4.1	8.9	4.4	6.4	4.5
6	11.6	10.4	7.5	6.9	10.4	4.7	6.5	3.9	6.1	3.4	7.0	4.6
7	11.6	11.1	7.8	7.2	14.0	5.6	5.9	3.6	6.2	3.2	7.4	5.2
8	---	---	8.3	7.4	13.7	7.1	6.4	3.6	5.6	3.3	7.8	5.1
9	---	---	9.2	7.9	15.0	6.6	7.6	3.7	5.8	3.4	8.5	5.2
10	---	---	10.0	8.4	15.0	6.9	10.3	4.0	5.1	3.4	8.7	5.4
11	---	---	---	---	11.9	5.9	8.8	4.5	6.2	3.5	10.1	6.1
12	8.7	7.8	---	---	10.4	5.1	12.6	5.2	5.5	4.1	10.3	6.8
13	9.1	7.5	---	---	14.9	5.8	14.7	6.3	5.2	3.6	8.8	6.8
14	10.0	7.2	---	---	15.0	6.1	15.0	6.0	7.4	4.0	7.2	5.9
15	12.3	7.8	---	---	15.0	7.1	14.9	4.7	8.8	4.6	6.3	5.1
16	15.0	8.7	14.2	12.4	15.0	8.3	10.4	3.7	8.2	5.1	6.5	5.4
17	15.0	9.2	15.0	8.5	14.8	7.0	11.3	3.7	9.1	4.7	5.7	5.1
18	15.0	9.2	14.7	8.2	9.7	4.1	8.7	3.7	8.2	5.2	5.8	5.7
19	13.7	8.6	13.2	7.2	14.8	4.3	7.0	2.9	9.6	5.4	5.9	5.5
20	12.8	7.1	12.6	5.7	15.0	5.0	7.5	3.0	11.1	6.8	5.8	5.5
21	12.4	7.5	12.3	4.6	15.0	6.0	5.5	3.0	7.8	5.7	6.1	5.7
22	9.1	6.8	14.2	4.8	15.0	6.0	5.0	2.7	7.1	5.5	6.3	6.1
23	7.7	6.4	14.4	5.3	15.0	6.2	5.3	3.3	6.9	5.1	6.4	6.1
24	8.5	7.7	11.7	6.0	14.2	5.4	6.3	3.3	6.4	4.5	6.3	5.7
25	9.0	8.3	14.4	5.0	14.1	4.4	7.2	3.0	7.6	5.3	7.1	5.8
26	9.9	8.8	14.7	6.0	14.9	4.1	10.9	4.9	8.4	5.5	7.7	5.8
27	9.5	8.5	15.0	6.1	12.9	4.2	10.4	5.7	9.4	5.6	8.5	5.8
28	8.4	7.8	15.0	6.1	10.5	3.3	9.6	5.2	9.8	5.5	9.2	6.6
29	10.2	8.1	15.0	6.6	10.9	3.2	11.0	5.1	8.3	5.5	10.4	7.0
30	10.7	9.3	15.0	5.8	6.1	3.8	12.2	5.7	11.3	5.5	11.6	7.2
31	---	---	13.0	6.5	---	---	9.3	5.3	12.4	6.1	---	---
MONTH	15.0	6.4	15.0	4.6	15.0	3.2	15.0	2.7	12.4	3.2	12.1	4.0
YEAR	15.0	2.1										

04187500 OTTAWA RIVER AT ALLENTOWN, OH

LOCATION.--Lat 40°45'18", long 84°11'41", in NW 1/4 sec. 29, T.3S., R.6E., Allen County, Hydrologic Unit 04100007, on left bank at upstream side of bridge on State Highway 81 at Allentown, 0.3 mi (0.5 km) downstream from Kessler Run, and 1.5 mi (2.4 km) upstream from McBride Ditch.

DRAINAGE AREA.--160 mi² (414 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to December 1935, August 1943 to current year.

REVISED RECORDS.--WSP 1004: 1924. WSP 1144: 1944(M). WSP 1207: 1927. WSP 1387: 1924(M), 1927-28(M), 1929, 1930(M), 1935(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 789.14 ft (240.530 m) above mean sea level. Prior to Oct. 1, 1925, nonrecording gage and Oct. 1, 1925, to Dec. 30, 1935, water-stage recorder, at site 35 ft (11 m) downstream at same datum.

REMARKS.--Records good except those for winter periods, which are fair. Diurnal fluctuation and some regulation caused by operation of water-supply and sewage-treatment plants of city of Lima upstream from station.

AVERAGE DISCHARGE.--46 years, 125 ft³/s (3.540 m³/s), 10.61 in/yr (269 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,740 ft³/s (219 m³/s) Jan. 22, 1959, gage height, 10.88 ft (3.316 m), from rating curve extended above 4,800 ft³/s (136 m³/s); minimum daily, 2.4 ft³/s (0.068 m³/s) June 28, July 21, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 15, 1939, reached a stage of 10.1 ft (3.08 m), discharge, 6,160 ft³/s (174 m³/s), and flood in May 1943 reached a stage of about 10 ft (3 m), discharge, about 6,000 ft³/s (170 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,250 ft³/s (35.4 m³/s) Mar. 18 (base, 1,600 ft³/s, 45.3 m³/s) gage height, 5.60 ft (1.707 m); minimum, 14 ft³/s (0.396 m³/s) Jan. 18, but may have been less during period of ice effect Jan. 6 to Feb. 3.

REVISIONS.--Revised figures of discharge for the water year 1976, superseding those published in the report for 1976 are given herein.

EXTREMES FOR 1976 WATER YEAR.--Peak discharges above base of 1,600 ft³/s (45.3 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 26	1315	2210	62.6	7.01	2.137
Feb. 11	0300	1500	42.5	6.00	1.829
Feb. 17	1200	*4050	115	*8.79	2.679
Mar. 4	1800	1870	53.0	6.55	1.996

Minimum discharge, 23 ft³/s (0.65 m³/s) Jan. 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	29	65	320	46	87	75	58	267	46	30	29
2	32	35	50	100	38	84	87	56	252	39	29	29
3	30	30	38	110	36	117	80	56	82	36	30	29
4	28	32	35	120	34	1060	78	53	62	38	30	28
5	27	30	34	66	32	1350	70	51	52	35	32	25
6	25	27	57	38	31	664	67	93	46	34	68	24
7	30	30	58	32	30	334	62	279	40	32	43	25
8	34	27	50	27	32	196	56	101	37	39	31	27
9	46	25	47	25	45	152	53	60	40	32	34	34
10	36	48	41	24	325	135	51	52	40	35	34	50
11	32	36	39	23	996	135	53	73	39	34	30	28
12	28	29	40	23	610	117	48	67	68	38	28	27
13	25	29	52	180	402	120	49	59	117	31	42	27
14	28	30	50	271	406	98	47	55	45	30	52	27
15	27	29	267	95	299	85	43	52	38	30	36	24
16	29	27	259	46	750	87	46	51	73	58	30	27
17	32	25	132	37	3770	85	44	50	49	43	30	45
18	159	26	55	35	2640	87	41	60	38	32	29	31
19	91	26	38	33	1010	106	40	73	120	32	29	28
20	65	30	34	31	525	132	44	55	63	32	30	34
21	49	45	30	30	525	230	51	56	75	37	29	30
22	44	30	28	30	650	203	52	49	51	36	27	30
23	36	27	26	30	390	111	43	43	40	39	25	25
24	32	28	24	30	186	87	52	40	82	35	26	30
25	32	32	30	35	120	98	223	70	95	27	32	27
26	29	28	34	1520	87	87	206	40	48	28	26	41
27	30	35	32	829	67	129	132	32	38	45	27	93
28	30	27	30	398	73	123	80	33	48	46	27	34
29	28	40	29	213	98	93	78	31	38	60	33	29
30	26	73	45	89	---	82	65	28	67	35	35	32
31	26	---	210	60	---	78	---	203	---	33	31	---
TOTAL	1201	965	1959	4900	14253	6552	2116	2079	2150	1147	1015	969
MEAN	38.7	32.2	63.2	158	491	211	70.5	67.1	71.7	37.0	32.7	32.3
MAX	159	73	267	1520	3770	1350	223	279	267	60	68	93
MIN	25	25	24	23	30	78	40	28	37	27	25	24
CFSM	.24	.20	.40	.99	3.07	1.32	.44	.42	.45	.23	.20	.20
IN.	.28	.22	.46	1.14	3.31	1.52	.49	.48	.50	.27	.24	.23

CAL YR 1975 TOTAL 45050 MEAN 123 MAX 4070 MIN 24 CFSM .77 IN 10.47
WTR YR 1976 TOTAL 39306 MEAN 107 MAX 3770 MIN 23 CFSM .67 IN 9.14

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	34	24	19	18	67	68	94	28	573	30	36
2	24	28	24	19	18	48	365	93	27	452	30	42
3	22	24	23	19	20	49	698	48	28	136	28	45
4	22	26	23	20	22	501	385	261	26	71	30	33
5	24	24	23	20	21	511	163	447	24	76	50	33
6	50	25	23	20	21	152	91	194	25	44	41	32
7	33	24	27	19	21	56	57	87	28	38	80	33
8	27	24	26	19	23	46	76	50	30	44	37	30
9	25	24	25	19	25	49	84	41	139	35	38	31
10	24	22	24	19	48	42	71	40	47	31	125	37
11	24	26	23	19	66	38	65	44	73	29	100	32
12	25	27	22	18	48	57	50	44	47	32	241	31
13	25	25	22	18	42	145	49	44	35	32	67	60
14	24	25	22	18	36	109	50	36	36	30	37	229
15	24	23	21	18	34	47	47	33	34	30	63	95
16	22	27	21	18	33	42	44	34	33	30	43	333
17	21	27	21	17	32	36	48	35	33	62	44	281
18	21	27	21	17	31	785	44	35	32	33	35	162
19	27	23	25	17	30	706	38	33	30	35	35	698
20	55	23	23	18	30	283	48	31	28	35	35	178
21	34	25	22	18	29	128	35	30	27	38	40	69
22	29	27	22	19	34	337	48	27	25	45	80	51
23	27	30	22	19	152	573	85	31	27	35	43	52
24	50	28	22	19	461	417	73	33	26	30	45	52
25	38	27	21	19	203	170	65	30	33	48	40	51
26	30	37	21	18	80	82	80	27	28	38	37	45
27	25	31	21	18	743	55	59	27	30	31	41	43
28	23	28	20	18	270	573	65	25	35	34	38	39
29	22	26	20	18	---	503	62	27	75	34	52	38
30	26	25	20	18	---	216	58	27	48	33	49	37
31	57	---	20	18	---	75	---	32	---	31	37	---
TOTAL	905	792	694	573	2591	6938	3169	2040	1137	2243	1679	2726
MEAN	29.2	26.4	22.4	18.5	92.5	224	106	65.8	37.9	72.4	54.2	90.9
MAX	57	37	27	20	743	785	698	447	139	573	241	698
MIN	21	22	20	17	18	36	35	25	24	29	28	30
CFSM	.18	.17	.14	.12	.58	1.40	.66	.41	.24	.45	.34	.57
IN.	.21	.18	.16	.13	.60	1.61	.74	.47	.26	.52	.39	.63

CAL YR 1976 TOTAL 37572 MEAN 103 MAX 3770 MIN 20 CFSM .64 IN 8.74
WTR YR 1977 TOTAL 25487 MEAN 69.8 MAX 785 MIN 17 CFSM .44 IN 5.93

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 1969 to current year.
WATER TEMPERATURES: March 1969 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,810 micromhos Feb. 11, 1977; minimum recorded, 199 micromhos Mar. 18, 1973.
WATER TEMPERATURES: Maximum recorded, 31.5°C June 29, 1970, July 15, 1976; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,810 micromhos Feb. 11; minimum, 365 micromhos July 1.
WATER TEMPERATURES: Maximum, 30.0°C July 5; minimum, 0.0°C Dec. 21 to Feb. 11, 16, 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
FEB												
28...	1230	245	600	7.8	1.0	12.2	86	5.5	220	140	55	19
JUN												
07...	1605	24	2100	8.1	19.5	10.0	120	5.6	480	350	110	50

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
FEB 28...	35	6.6	97	0	80	2.5	100	66	.2	5.9	330	9.1
JUN 07...	230	14	150	0	120	2.0	500	240	.2	13	1230	19

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
FEB 28...	.14	5.5	.45	2	50	18	130	14	60	.0	80	10
JUN 07...	2.8	24	1.3	2	40	3	110	0	50	.0	80	8.7

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	---	---	2690	2510	2340	2030	1340	851
2	---	---	---	---	---	---	2640	2410	2230	2040	2110	1380
3	---	---	---	---	---	---	2500	2200	2150	2000	2150	1720
4	---	---	---	---	---	---	2290	1980	2220	1860	1410	542
5	---	---	---	---	---	---	2330	2020	2280	2060	645	525
6	---	---	---	---	---	---	2310	2040	2270	2040	926	652
7	---	---	---	---	1930	1420	2290	2040	2280	2010	1810	944
8	---	---	2270	2170	2160	1380	2300	2100	2190	2010	1940	1500
9	---	---	2230	1930	2270	2030	2460	2210	2170	1960	2080	1500
10	---	---	2000	1790	2290	2070	2390	2260	2160	1840	2090	1690
11	---	---	2160	1760	2270	2050	2460	2240	2810	2050	2110	1840
12	---	---	2210	1970	2270	2050	2550	2270	2740	2470	2120	1800
13	---	---	2190	1970	2340	2160	2550	2280	2430	1890	1350	1040
14	2160	2040	2390	2020	2240	1980	2270	2070	2210	1860	1080	956
15	2250	2040	2400	2190	2280	2040	2290	2040	2320	2160	1790	1010
16	2290	2150	2390	1950	2310	2110	2390	2070	2510	2070	1930	1550
17	2340	2150	2310	1950	2270	2070	2650	2290	2620	2040	2100	1750
18	2410	2210	2360	2160	2570	2160	2440	2100	2400	1890	2120	385
19	2340	2110	2360	2140	2470	2120	2260	1970	2620	2100	614	412
20	2070	1120	2470	2250	2330	2130	2260	2050	2610	2080	785	619
21	1300	1140	2500	2120	2170	1960	2220	1980	2740	2180	1020	774
22	1850	1330	2210	1950	2640	2210	2280	2060	2690	2150	1020	608
23	2150	1820	2100	1820	2550	2260	2460	2080	2290	848	625	552
24	1970	1260	2000	1670	2790	2300	2190	1970	859	636	692	600
25	1410	1250	1950	1680	2640	2270	2020	1860	759	676	918	694
26	1810	1430	1910	1720	2390	2230	2020	1870	972	765	1230	947
27	---	---	1960	1320	2430	2190	2230	1950	1120	451	1480	1240
28	---	---	1970	1620	2430	2130	2540	2240	825	491	1410	507
29	---	---	---	---	2680	2140	2570	2230	---	---	612	505
30	---	---	---	---	2600	2280	2210	2060	---	---	874	618
31	---	---	---	---	2620	2300	2570	2040	---	---	1220	847
MONTH	2410	1120	2500	1320	2790	1380	2690	1860	2810	451	2150	385

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1780	1160	1350	1210	2230	1760	895	365	---	---	---	---
2	1220	595	1340	1000	2270	1820	610	450	---	---	---	---
3	607	475	1240	1020	2390	2080	903	621	---	---	---	---
4	737	525	1190	636	2510	1720	1510	918	---	---	---	---
5	854	744	685	569	2570	2270	1060	947	---	---	---	---
6	1060	882	903	700	2550	2310	---	---	---	---	1760	1620
7	1450	1050	1090	877	2410	2100	---	---	---	---	1770	1430
8	1750	1070	1410	1080	2600	2090	---	---	1710	1360	1820	1340
9	1140	1050	1730	1400	2280	744	---	---	1880	1500	2300	1400
10	1060	1030	1840	1150	1850	960	---	---	1760	817	1950	1770
11	1200	1040	1520	1120	2150	1040	---	---	1220	601	2020	1740
12	1530	1200	1570	1180	1250	1050	---	---	820	534	1990	1760
13	1430	1180	1960	1290	1850	1170	---	---	1220	828	1960	1100
14	1690	1230	2120	1200	2080	1830	---	---	1650	1050	1040	566
15	1870	1300	2200	1380	2030	1640	---	---	1840	960	1210	833
16	2010	1420	---	---	1960	1680	---	---	1250	979	1000	450
17	1900	1340	---	---	2020	1770	---	---	1380	1150	700	511
18	1520	1400	---	---	2030	1800	---	---	1740	1290	854	436
19	1680	1270	---	---	2330	1880	---	---	1900	1370	575	415
20	1870	1090	---	---	2140	2000	---	---	1910	1660	746	510
21	1510	1260	---	---	2470	2130	---	---	2050	1700	972	737
22	1910	1310	---	---	2160	2020	---	---	1800	985	1180	988
23	1310	1120	---	---	2080	1870	---	---	1330	1130	1290	1160
24	1330	1130	---	---	2210	1710	---	---	1690	1350	1210	1060
25	1380	1250	2460	2050	2230	1900	---	---	1610	1300	1220	1140
26	1310	1090	2370	2040	2440	1950	---	---	1720	1610	1240	1190
27	1330	1110	2340	2100	2340	2000	---	---	---	---	1340	1170
28	1750	1130	2340	2050	2160	1860	---	---	---	---	1350	1220
29	1530	1190	2600	2220	2070	1070	---	---	---	---	1520	1330
30	1490	1250	2460	2190	1550	972	---	---	---	---	1520	1330
31	---	---	2340	2160	---	---	---	---	---	---	---	---
MONTH	2010	475	2600	569	2600	744	1510	365	2050	534	2300	415
YEAR	2810	365										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04187500 OTTAWA RIVER AT ALLENTOWN, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.0	14.5	---	---	---	---	0.0	0.0	0.0	0.0	4.5	1.0
2	18.5	15.0	---	---	---	---	0.0	0.0	0.0	0.0	5.5	2.0
3	19.0	15.5	---	---	---	---	0.0	0.0	0.0	0.0	6.5	5.0
4	19.0	16.0	---	---	---	---	0.0	0.0	0.0	0.0	6.5	4.5
5	19.5	17.0	---	---	---	---	0.0	0.0	0.0	0.0	4.5	3.0
6	19.0	16.0	---	---	---	---	0.0	0.0	0.0	0.0	5.5	2.5
7	16.0	13.5	---	---	3.5	1.5	0.0	0.0	0.0	0.0	6.0	4.5
8	14.0	12.5	5.5	4.0	1.5	0.0	0.0	0.0	0.0	0.0	9.0	4.5
9	13.5	12.5	6.5	3.5	1.0	0.0	0.0	0.0	0.0	0.0	11.0	7.5
10	13.5	11.0	6.5	5.5	2.5	1.0	0.0	0.0	0.0	0.0	12.5	8.5
11	14.5	12.0	6.5	5.5	3.0	1.5	0.0	0.0	3.5	0.0	13.5	9.5
12	16.0	12.5	5.5	4.0	4.5	2.5	0.0	0.0	5.0	3.5	13.5	12.5
13	17.0	14.5	5.5	3.5	3.0	1.0	0.0	0.0	4.5	3.5	12.5	10.0
14	14.5	12.5	5.5	3.0	2.0	0.0	0.0	0.0	4.0	2.5	11.0	9.5
15	14.5	12.0	5.0	2.5	4.0	1.5	0.0	0.0	2.5	1.0	14.0	9.0
16	12.5	11.0	5.0	2.5	3.0	2.5	0.0	0.0	1.5	0.0	13.5	11.0
17	11.5	9.5	6.5	3.5	4.0	1.5	0.0	0.0	2.5	0.0	10.5	8.5
18	10.0	7.5	7.0	4.5	4.0	2.0	0.0	0.0	4.0	2.0	8.0	5.0
19	9.5	8.5	7.5	6.0	6.5	3.0	0.0	0.0	6.5	4.0	6.0	4.0
20	11.0	9.5	6.5	4.5	7.0	4.0	0.0	0.0	6.5	4.0	6.0	5.5
21	10.0	8.0	5.0	4.0	3.5	0.0	0.0	0.0	4.5	2.0	8.5	4.5
22	9.0	7.0	4.0	3.0	0.0	0.0	0.0	0.0	7.0	2.5	8.0	5.0
23	7.5	6.5	3.5	2.0	0.5	0.0	0.0	0.0	7.0	4.5	6.0	4.0
24	11.5	7.5	3.0	1.5	0.0	0.0	0.0	0.0	4.0	2.0	6.5	4.0
25	11.5	9.5	6.0	2.5	0.0	0.0	0.0	0.0	3.5	2.0	8.0	4.5
26	9.5	8.0	9.5	6.0	0.0	0.0	0.0	0.0	3.5	2.5	10.5	6.0
27	---	---	10.0	8.0	0.0	0.0	0.0	0.0	4.0	0.5	11.5	9.0
28	---	---	7.5	3.5	0.5	0.0	0.0	0.0	2.5	0.5	11.5	10.0
29	---	---	---	---	0.0	0.0	0.0	0.0	---	---	13.5	10.5
30	---	---	---	---	0.0	0.0	0.0	0.0	---	---	16.0	12.0
31	---	---	---	---	0.0	0.0	0.0	0.0	---	---	14.0	10.5
MONTH	19.5	6.5	10.0	1.5	7.0	0.0	0.0	0.0	7.0	0.0	16.0	1.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.0	9.5	17.5	13.0	23.5	19.5	22.0	20.0	---	---	---	---
2	13.0	12.0	17.5	16.0	21.5	18.0	22.0	18.5	---	---	---	---
3	12.5	11.0	17.5	15.5	22.5	17.0	23.5	19.0	---	---	---	---
4	11.0	10.5	16.5	15.5	23.5	18.0	28.5	21.5	---	---	---	---
5	10.5	8.0	18.0	15.0	23.0	20.5	30.0	25.0	---	---	---	---
6	9.0	6.5	18.0	17.0	22.5	18.0	---	---	---	---	26.0	23.5
7	9.5	6.5	20.0	16.0	19.0	16.0	---	---	---	---	25.0	21.0
8	11.5	7.0	18.5	15.0	17.0	15.5	---	---	27.5	24.5	25.5	20.5
9	12.0	7.0	15.5	12.5	17.5	15.5	---	---	27.0	23.0	26.5	21.5
10	15.5	9.0	16.5	11.5	20.5	15.0	---	---	26.5	23.5	24.5	21.0
11	18.0	12.5	18.0	13.0	19.5	17.0	---	---	28.5	23.0	21.5	18.5
12	19.5	15.0	18.0	14.0	18.5	16.5	---	---	25.5	21.5	19.5	18.0
13	20.5	16.0	20.5	15.0	21.0	16.5	---	---	26.0	21.5	20.5	18.5
14	19.0	16.5	21.5	17.0	22.5	19.0	---	---	27.5	23.5	20.0	18.0
15	19.0	14.5	22.0	16.5	26.5	19.0	---	---	28.0	23.0	19.0	17.5
16	20.0	15.0	---	---	27.5	21.0	---	---	27.0	24.0	19.5	18.5
17	21.0	17.5	---	---	29.0	23.5	---	---	28.0	23.5	21.0	19.0
18	22.5	16.5	---	---	28.0	24.5	---	---	24.0	20.0	22.5	20.0
19	21.0	18.5	---	---	27.5	22.0	---	---	21.5	19.5	21.0	20.0
20	19.5	17.5	---	---	26.5	21.5	---	---	21.5	18.5	20.0	18.0
21	20.0	18.0	---	---	26.5	20.0	---	---	21.5	20.0	17.5	17.0
22	18.5	16.0	---	---	22.5	20.0	---	---	23.5	20.0	19.0	16.0
23	17.5	14.5	---	---	24.5	18.5	---	---	25.5	20.5	20.5	17.5
24	15.5	13.5	---	---	26.5	21.0	---	---	23.0	20.5	20.5	19.5
25	14.0	11.5	29.0	23.0	27.5	23.0	---	---	23.0	18.5	21.5	19.0
26	16.0	11.5	28.0	21.0	29.0	22.0	---	---	21.0	19.5	21.5	19.5
27	17.0	12.0	28.0	20.0	26.5	22.5	---	---	---	---	20.5	18.0
28	15.5	11.5	28.5	21.0	28.5	23.0	---	---	---	---	18.5	17.0
29	15.0	9.5	28.0	22.0	27.5	22.0	---	---	---	---	18.5	15.5
30	16.5	11.5	27.0	20.0	24.5	20.5	---	---	---	---	20.0	16.5
31	---	---	27.0	21.0	---	---	---	---	---	---	---	---
MONTH	22.5	6.5	29.0	11.5	29.0	15.0	30.0	18.5	28.5	18.5	26.5	15.5
YEAR	30.0	0.0										

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH

LOCATION.--Lat 41°01'08", long 84°17'20", in NE 1/4 sec. 28, T.1N., R.5E., Putnam County, Hydrologic Unit 04100007, on left bank at old bridge abutment, 0.2 mi (0.3 km) upstream from bridge on State Route 114, 2.5 mi (4.0 km) upstream from Blanchard River, 4.5 mi (7.2 km) downstream from Ottawa River, and 0.8 mi (1.3 km) east of Cloverdale.

DRAINAGE AREA.--713 mi^2 (1,847 km^2).

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1967 to current year.
pH: June 1967 to current year.
WATER TEMPERATURES: June 1967 to current year.
DISSOLVED OXYGEN: June 1967 to current year.

INSTRUMENTATION.--Water quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,140 micromhos Jan. 23, Feb. 4, 1977; minimum, 204 micromhos Apr. 5, 1974.
pH: Maximum, 10.5 units Dec. 4-6, 18-26, 1969, Jan. 2, 6, 1970; minimum, 4.5 units Oct. 3, 1969.
WATER TEMPERATURES: Maximum, 31.0°C Aug. 23, 24, 1968, July 15, 1977; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during 1973, 1975 to 1977; minimum, 0.0 mg/L Aug. 27, 1974.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,140 micromhos Jan. 23, Feb. 4; minimum, 408 micromhos Feb. 28, Mar. 1.
pH: Maximum recorded, 9.8 units May 30; minimum recorded, 6.7 units Mar. 1.
WATER TEMPERATURES: Maximum, 31.0°C July 15; minimum, 0.0°C Dec. 18, Jan. 14, 15.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during October, April to July; minimum recorded 0.5 mg/L Jan. 31, Feb. 1, 2, 5, 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
14...	1020	715	910	7.9	9.5	9.0	78	4.8	320	180	85	27
JUN												
08...	1115	42	1600	8.7	17.5	11.1	120	5.7	470	310	110	47

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
14...	52	4.9	169	0	139	3.4	150	83	.4	7.6	493	6.3
JUN												
08...	140	10	166	15	161	.6	330	170	1.0	8.1	913	14

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
14...	.19	5.3	.40	3	10	20	20	8	40	.0	80	4.1
JUN												
08...	.32	.51	.62	5	30	5	30	0	10	.2	30	9.8

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1430	1260	1390	1260	1580	1550	2090	2020	1880	1850	465	408
2	1250	1090	1560	1400	1600	1570	2060	2020	1910	1850	549	468
3	1090	1020	1560	1470	1680	1600	2080	2060	2060	1910	612	537
4	1060	1030	1500	1460	1710	1650	2120	2060	2140	2060	678	486
5	1080	1050	1510	1460	1720	1710	2120	2090	2110	2010	606	486
6	1210	1010	1450	1330	1790	1710	2100	2080	2080	2020	531	486
7	1390	1200	1330	1300	1780	1720	2110	2090	2010	1940	606	537
8	1580	1390	1320	1300	1770	1740	2090	2060	1960	1940	666	606
9	1600	1550	1340	1300	1840	1780	2060	1980	1940	1910	705	666
10	1550	1460	1460	1340	1840	1700	1980	1910	1950	1910	843	708
11	1460	1430	1550	1460	1690	1670	1920	1880	1990	1960	909	858
12	1480	1450	1540	1500	1690	1670	1940	1910	1970	1870	957	897
13	1460	1280	1510	1490	1680	1630	1940	1910	1870	1750	1030	888
14	1280	1190	1550	1490	1780	1640	1950	1910	1900	1770	1090	888
15	1310	1190	1620	1550	1850	1790	1990	1950	1860	1690	897	834
16	1420	1310	1640	1590	1850	1830	2090	1970	1690	1620	831	783
17	1490	1430	1590	1390	1860	1840	---	---	1610	1570	807	774
18	1540	1490	1390	1350	1870	1830	---	---	1620	1580	771	579
19	1540	1520	1500	1400	1860	1800	2130	2100	1670	1570	684	480
20	1540	1520	1540	1510	1790	1660	2120	2040	1670	1630	525	483
21	1610	1480	1570	1530	1710	1660	2060	2030	1650	1490	612	528
22	1690	1630	1610	1570	1780	1710	2080	2040	1490	1160	639	606
23	1710	1670	1630	1610	1780	1760	2140	2080	1330	897	705	567
24	1670	1590	1640	1630	1880	1780	2120	1990	1090	765	546	516
25	1590	1360	1670	1630	2030	1900	1980	1930	744	447	585	522
26	1340	1240	1790	1680	2060	2010	1940	1930	447	426	621	579
27	1480	1300	1790	1740	2010	1900	1930	1910	582	417	654	618
28	1520	1480	1740	1630	2060	1910	1940	1910	558	408	663	576
29	1490	1410	1660	1550	2080	2050	1940	1920	---	---	648	504
30	1400	1300	1580	1550	2130	2060	1970	1940	---	---	567	516
31	1300	1260	---	---	2120	2090	1940	1880	---	---	621	567
MONTH	1710	1010	1790	1260	2130	1550	2140	1880	2140	408	1090	408

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	675	603	900	867			---	---	1360	1310	1350	1230
2	678	621	900	858			---	---	1430	1310	1220	1100
3	699	480	936	858			---	---	1560	1440	1050	723
4	477	447	900	564			---	---	1670	1560	993	714
5	546	468	636	582			---	---	1670	1530	1150	999
6	624	543	645	564			762	711	1550	1490	1250	1150
7	666	624	681	624			888	732	1660	1500	1300	1240
8	696	669	780	657			900	819	1610	1460	1250	1160
9	768	696	738	693			831	819	1530	1250	1160	1120
10	906	771	774	720			---	---	1230	1100	1280	1140
11	894	807	858	756			---	---	1220	957	1310	1260
12	825	807	939	867			---	---	1090	849	1360	1300
13	810	783	993	930			---	---	885	699	1370	840
14	813	783	945	849			---	---	726	705	978	456
15	834	783	903	858			---	---	822	705	1060	666
16	879	804	927	864			---	---	879	816	654	543
17	894	828	975	921			---	---	996	879	714	507
18	930	858	1050	948			---	---	1130	987	507	459
19	957	888	1030	975			---	---	1160	1140	633	432
20	969	924	1050	975			---	---	1130	984	492	426
21	966	924	1100	990			---	---	1040	981	570	495
22	975	624	1140	1050			---	---	1070	1040	636	573
23	624	426	1140	1050			---	---	1400	1040	705	630
24	666	567	1160	1120			---	---	1270	1230	759	705
25	702	666	1170	1140			---	---	1220	1160	861	759
26	756	705	1270	1180			---	---	1170	1060	966	864
27	840	762	1310	1200			---	---	1210	1100	1030	966
28	852	780	1310	1250			---	---	1200	1130	978	924
29	831	747	1260	1210			---	---	1180	1120	996	957
30	858	831	1240	1200			---	---	1220	1180	1040	984
31	---	---	---	---			---	---	1430	1190	---	---
MONTH	975	426	1310	564			900	711	1670	699	1370	426
YEAR	2140	408										

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	7.7	7.6	8.2	8.0	8.1	7.8	7.4	7.3	7.1	6.7
2	---	---	7.7	7.6	8.0	7.9	7.8	7.7	7.3	7.3	7.2	7.0
3	---	---	7.7	7.6	8.3	7.8	7.8	7.6	7.4	7.3	7.2	7.1
4	---	---	7.7	7.6	7.9	7.8	---	---	7.5	7.3	7.2	6.9
5	---	---	7.8	7.6	8.0	7.8	---	---	8.2	7.3	7.2	7.2
6	8.3	7.9	7.8	7.6	7.9	7.8	---	---	8.5	8.2	7.2	7.2
7	8.0	7.8	7.8	7.7	7.9	7.8	---	---	8.3	8.0	7.3	7.2
8	7.8	7.7	7.8	7.6	8.0	7.8	---	---	8.1	8.0	7.4	7.2
9	8.0	7.7	7.9	7.7	8.0	7.9	---	---	8.0	7.9	7.7	7.5
10	8.3	7.8	7.9	7.7	8.0	7.9	---	---	7.9	7.6	7.8	7.4
11	8.2	7.9	7.8	7.7	8.0	7.9	---	---	7.8	7.6	7.7	7.4
12	8.2	7.9	7.9	7.6	8.0	7.9	---	---	7.8	7.7	7.7	7.3
13	8.1	7.8	7.9	7.7	8.0	7.9	---	---	7.8	7.7	7.7	7.6
14	8.0	7.4	8.2	7.8	8.0	7.9	---	---	7.7	7.6	7.8	7.7
15	7.8	7.4	8.2	8.0	7.9	7.8	---	---	7.6	7.5	7.8	7.5
16	7.7	7.3	8.1	8.0	7.9	7.9	---	---	7.7	7.5	7.7	7.5
17	7.6	7.3	8.3	8.0	7.9	7.8	---	---	7.6	7.6	8.0	7.6
18	7.8	7.3	8.4	8.2	8.0	7.8	---	---	7.6	7.6	7.9	7.6
19	7.7	7.5	8.2	8.1	8.0	7.8	7.6	7.6	7.7	7.6	7.9	7.5
20	7.6	7.5	8.3	8.0	7.9	7.9	7.7	7.6	7.6	7.6	7.7	7.6
21	7.6	7.5	8.2	8.0	8.1	7.9	7.7	7.6	7.7	7.5	7.8	7.7
22	7.6	7.5	8.2	7.9	8.1	7.9	7.6	7.5	7.5	7.3	7.9	7.8
23	7.8	7.5	8.1	8.0	8.1	8.0	7.6	7.6	7.3	7.2	7.9	7.9
24	7.9	7.7	8.1	8.0	8.1	8.0	7.8	7.6	7.4	7.1	7.7	7.6
25	7.8	7.6	8.2	7.9	8.1	8.0	8.0	7.8	7.3	7.0	7.7	7.7
26	7.7	7.5	8.1	8.0	8.1	8.0	8.0	7.9	7.1	7.0	7.9	7.7
27	7.7	7.5	8.0	7.8	8.1	8.0	7.9	7.3	7.2	7.0	7.9	7.8
28	7.7	7.6	8.0	7.8	8.1	8.0	7.5	7.3	7.2	7.0	7.9	7.7
29	7.8	7.6	8.1	7.7	8.2	8.0	7.5	7.4	---	---	7.9	7.4
30	7.7	7.6	8.2	8.0	8.2	8.0	7.4	7.2	---	---	7.6	7.5
31	7.7	7.6	---	---	8.3	7.9	7.4	7.2	---	---	7.7	7.6
MONTH	8.3	7.3	8.4	7.6	8.3	7.8	8.1	7.2	8.5	7.0	8.0	6.7

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.8	7.7	---	---	9.1	8.7	---	---				
2	7.9	7.6	---	---	9.1	8.6	---	---				
3	7.5	7.4	---	---	9.3	8.4	---	---				
4	7.6	7.4	---	---	9.6	8.6	---	---				
5	7.6	7.5	---	---	9.2	8.7	---	---				
6	7.7	7.6	---	---	9.0	8.7	8.6	8.4				
7	7.7	7.7	---	---	9.1	8.4	8.0	8.0				
8	7.7	7.7	---	---	8.7	8.4	8.8	7.8				
9	7.9	7.7	---	---	---	---	8.8	8.0				
10	7.9	7.7	---	---	---	---	9.0	8.1				
11	7.9	7.7	---	---	---	---	8.9	8.3				
12	---	---	---	---	---	---	9.0	8.3				
13	---	---	---	---	---	---	9.3	8.5				
14	---	---	---	---	---	---	9.3	8.5				
15	---	---	---	---	---	---	9.1	8.5				
16	---	---	---	---	---	---	8.8	8.2				
17	---	---	9.0	8.7	---	---	9.2	8.0				
18	---	---	9.0	8.5	---	---	9.5	8.8				
19	---	---	9.1	8.5	---	---	8.3	8.1				
20	---	---	9.1	7.9	---	---	8.9	7.9				
21	---	---	9.1	8.1	---	---	8.3	7.6				
22	---	---	9.1	8.5	---	---	8.4	7.5				
23	---	---	9.2	8.6	---	---	8.5	7.5				
24	---	---	9.2	8.7	---	---	8.5	7.7				
25	---	---	9.2	8.7	---	---	8.7	7.7				
26	---	---	9.4	8.7	---	---	8.8	7.8				
27	---	---	9.6	8.7	---	---	8.8	8.0				
28	---	---	9.6	8.8	---	---	8.4	8.1				
29	---	---	9.6	8.9	---	---	---	---				
30	---	---	9.8	8.7	---	---	---	---				
31	---	---	9.3	8.7	---	---	---	---				
MONTH	7.9	7.4	9.8	7.9	9.6	8.4	9.5	7.5				
YEAR	9.8	6.7										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.5	15.0	6.5	5.5	1.5	0.5	1.5	0.5	2.0	1.5	1.5	1.0
2	19.0	15.5	7.5	6.0	1.5	0.5	1.0	0.5	1.5	1.0	1.5	1.0
3	19.5	16.0	8.0	6.5	1.5	0.5	1.0	0.0	1.5	1.5	2.0	1.0
4	20.0	16.0	7.5	6.0	1.0	0.5	0.5	0.0	1.5	1.0	3.0	1.0
5	20.5	16.5	6.0	3.5	1.0	0.5	1.0	0.0	1.5	1.5	3.5	3.0
6	19.0	15.5	6.0	4.0	1.0	0.5	1.0	0.5	2.0	1.0	4.0	3.0
7	17.0	14.5	6.0	5.0	1.0	0.5	1.0	0.5	1.5	1.0	5.0	4.0
8	15.5	14.5	5.0	2.0	1.0	1.0	1.0	0.5	2.0	1.0	6.0	4.0
9	15.0	13.5	3.5	2.0	1.0	0.5	2.0	1.0	1.5	1.0	7.5	5.5
10	14.5	13.5	4.0	2.0	1.0	0.5	1.5	1.0	1.5	0.5	9.0	7.5
11	14.5	13.0	4.5	3.0	1.0	0.5	2.0	1.0	1.0	0.5	10.0	9.0
12	15.5	13.5	3.5	2.0	1.0	0.5	1.5	1.0	1.0	1.0	11.5	10.0
13	16.5	14.5	2.5	1.5	1.0	0.5	2.5	0.5	1.5	1.0	11.5	10.0
14	15.5	13.5	2.5	1.5	1.0	0.5	1.0	0.0	1.5	1.0	10.5	9.5
15	14.0	12.5	2.5	1.0	1.0	0.5	1.0	0.0	1.5	1.0	12.0	9.5
16	13.0	11.5	2.0	0.5	1.0	0.5	---	---	1.5	1.0	12.0	11.5
17	12.5	10.5	2.0	1.0	1.0	0.5	---	---	1.5	1.0	11.0	9.5
18	11.0	9.0	3.0	1.5	1.0	0.0	---	---	1.0	1.0	9.0	6.0
19	9.5	9.0	4.0	2.5	1.0	0.5	1.5	0.5	1.0	0.5	6.5	5.0
20	9.5	8.5	3.0	2.5	1.0	0.5	1.5	1.0	1.5	1.0	6.5	6.0
21	8.5	8.0	3.0	2.0	1.5	1.0	1.5	1.0	1.5	1.0	6.5	5.5
22	8.5	7.5	2.0	1.0	1.5	1.0	1.5	1.0	1.0	0.5	6.5	5.5
23	7.5	6.0	1.5	0.5	1.5	1.0	1.5	1.0	1.0	0.5	6.0	5.0
24	8.0	7.0	2.0	0.5	1.5	0.5	1.0	1.0	1.5	1.0	6.0	4.5
25	8.5	8.0	2.0	1.5	1.0	0.5	1.5	1.0	1.5	1.0	6.5	5.5
26	8.5	7.5	5.0	2.5	1.0	0.5	2.0	1.0	1.5	1.0	8.0	6.5
27	7.5	6.0	6.5	5.5	1.5	0.5	2.0	1.5	1.5	1.5	10.0	8.0
28	6.5	5.0	6.0	4.0	1.0	0.5	2.0	1.5	1.5	1.0	10.5	9.5
29	6.0	5.0	4.0	1.5	1.5	1.0	2.0	2.0	---	---	12.5	10.5
30	6.5	6.0	2.0	1.0	1.5	1.0	2.0	1.5	---	---	14.0	12.5
31	7.0	5.5	---	---	2.0	1.0	2.0	1.5	---	---	14.0	12.0
MONTH	20.5	5.0	8.0	0.5	2.0	0.0	2.5	0.0	2.0	0.5	14.0	1.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	10.5	16.5	15.0	22.5	21.0	---	---	26.5	24.5	27.0	25.0
2	12.5	11.5	17.5	16.5	21.5	19.0	---	---	26.5	23.0	28.0	25.5
3	12.5	11.5	17.5	16.5	22.5	18.0	---	---	26.0	23.0	26.0	24.0
4	12.0	11.0	17.0	15.0	24.5	19.0	---	---	27.5	23.0	24.5	22.5
5	11.0	9.0	17.0	14.5	24.0	21.0	---	---	27.5	24.0	25.5	23.5
6	9.0	8.0	17.5	17.0	24.0	19.5	29.0	28.5	26.5	25.5	25.0	24.0
7	8.0	7.0	18.0	16.5	20.5	17.5	30.0	28.0	26.0	24.5	24.5	22.5
8	9.0	7.5	19.0	16.5	18.0	17.0	29.5	27.5	26.0	24.5	24.5	22.0
9	10.0	8.5	16.5	15.0	---	---	29.0	27.5	25.5	24.0	25.0	22.5
10	12.5	10.0	16.0	13.5	---	---	28.0	25.5	25.0	24.0	23.5	21.5
11	15.5	13.0	17.0	14.0	---	---	26.0	24.5	26.0	24.0	22.0	20.0
12	17.5	15.5	18.5	16.0	---	---	28.0	24.5	24.5	22.0	20.5	19.5
13	19.0	17.0	20.0	17.0	---	---	29.0	25.5	24.5	23.0	19.5	19.0
14	19.0	17.5	21.0	19.0	---	---	29.5	25.5	25.5	23.5	19.0	18.5
15	17.5	16.5	21.0	18.5	---	---	31.0	27.5	26.0	23.5	19.0	18.0
16	18.0	16.5	22.0	19.5	---	---	29.5	28.0	25.5	24.5	19.0	18.0
17	19.5	18.0	23.5	21.0	---	---	---	---	25.5	23.5	20.5	19.0
18	20.5	19.0	24.5	22.0	---	---	---	---	24.0	22.0	21.5	20.5
19	20.5	19.5	25.5	23.0	---	---	---	---	22.5	21.0	21.5	21.0
20	19.5	19.0	26.0	24.0	---	---	30.5	28.0	21.5	19.5	21.0	19.0
21	19.5	19.5	26.5	24.0	---	---	30.5	28.5	21.0	20.0	19.0	18.0
22	19.5	16.5	26.0	24.0	---	---	28.5	26.5	22.0	19.5	18.5	17.0
23	16.5	13.5	25.5	23.5	---	---	27.5	24.5	22.5	20.5	19.5	17.5
24	13.0	12.5	25.5	23.0	---	---	27.5	24.5	23.0	21.5	20.0	19.0
25	13.0	12.0	25.5	23.0	---	---	28.0	25.5	23.0	20.5	21.0	19.0
26	13.5	11.5	26.0	22.5	---	---	26.5	24.0	28.5	20.5	21.0	20.0
27	15.0	13.0	27.5	22.0	---	---	25.5	23.0	30.0	24.0	20.0	19.0
28	15.5	13.5	28.0	22.5	---	---	24.0	23.0	30.5	24.0	19.0	18.0
29	13.5	12.5	26.0	23.0	---	---	---	---	27.0	23.5	18.5	16.5
30	15.0	13.5	27.0	22.0	---	---	---	---	26.0	23.5	19.0	17.0
31	---	---	24.0	22.0	---	---	---	---	26.0	24.0	---	---
MONTH	20.5	7.0	28.0	13.5	24.5	17.0	31.0	23.0	30.5	19.5	28.0	16.5
YEAR	31.0	0.0										

04188200 AUGLAIZE RIVER AT CLOVERDALE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	10.8	7.5	---	---	---	---	---	---	0.8	0.5	11.7	11.2
2	12.1	7.5	---	---	---	---	---	---	1.3	0.5	11.8	11.1
3	15.0	7.1	---	---	---	---	---	---	1.1	0.8	11.9	11.0
4	15.0	9.1	---	---	---	---	---	---	0.9	0.6	11.8	10.8
5	15.0	7.0	---	---	---	---	---	---	0.7	0.5	11.2	10.9
6	---	---	---	---	---	---	---	---	0.7	0.5	11.4	11.2
7	---	---	---	---	---	---	---	---	0.7	0.6	11.4	11.2
8	---	---	---	---	---	---	---	---	1.0	0.6	11.5	10.6
9	---	---	9.9	8.2	---	---	---	---	1.3	0.9	11.2	9.8
10	---	---	9.2	8.0	---	---	---	---	1.5	0.9	10.5	9.2
11	---	---	8.7	7.6	---	---	---	---	2.2	1.1	10.0	9.6
12	---	---	9.0	7.5	---	---	---	---	2.8	1.7	9.5	8.4
13	---	---	9.4	8.1	---	---	---	---	5.2	2.5	9.2	8.7
14	---	---	10.9	9.0	---	---	---	---	6.3	5.3	9.6	8.7
15	---	---	10.2	9.1	---	---	---	---	6.4	5.8	10.0	9.1
16	---	---	10.3	9.2	---	---	---	---	5.9	4.9	10.1	8.9
17	---	---	11.2	9.3	---	---	---	---	5.7	4.5	10.5	9.0
18	---	---	11.2	9.8	---	---	---	---	5.6	5.0	10.6	9.7
19	---	---	10.8	9.3	---	---	2.6	1.7	5.4	4.7	10.6	10.0
20	---	---	11.2	9.1	---	---	2.3	1.5	5.4	4.5	10.8	10.5
21	---	---	10.5	9.1	12.8	10.8	2.0	1.4	5.1	4.3	11.0	10.8
22	---	---	10.4	8.8	12.6	11.3	1.9	1.2	7.4	4.2	11.0	10.7
23	---	---	10.5	9.1	12.8	11.4	2.1	1.2	8.4	5.6	11.2	11.0
24	---	---	10.9	9.1	12.8	11.4	1.7	1.3	9.1	7.9	11.4	10.7
25	---	---	---	---	12.8	10.8	1.8	1.0	10.3	9.3	10.7	10.5
26	8.0	7.2	---	---	11.9	11.0	2.1	1.4	11.1	10.3	10.5	9.7
27	8.2	6.6	---	---	11.4	10.3	2.0	1.4	11.4	11.0	9.8	9.0
28	9.0	6.8	---	---	10.5	9.5	1.4	1.0	11.4	10.9	9.0	8.3
29	9.5	8.1	---	---	11.7	9.1	1.2	0.9	---	---	8.9	8.6
30	8.6	7.8	---	---	---	---	1.2	0.8	---	---	8.6	8.4
31	---	---	---	---	---	---	0.9	0.5	---	---	8.9	8.4
MONTH	15.0	6.6	11.2	7.5	12.8	9.1	2.6	0.5	11.4	0.5	11.9	8.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.6	8.9	10.3	7.5	12.6	7.7	---	---	8.7	7.2	9.8	5.6
2	9.2	8.3	9.0	6.8	13.5	7.4	---	---	11.3	5.6	9.4	5.5
3	8.5	8.1	9.2	6.2	13.5	7.5	---	---	11.1	6.5	5.8	4.0
4	8.7	8.5	7.1	6.5	15.0	8.1	---	---	9.2	6.2	5.5	3.8
5	9.3	8.7	7.0	6.6	13.8	8.3	---	---	8.3	5.1	7.7	4.8
6	9.9	9.3	6.9	6.6	13.6	8.0	9.8	6.3	6.3	4.1	8.6	5.1
7	10.1	9.9	7.5	6.9	15.0	8.8	11.4	6.6	6.4	4.0	11.9	5.7
8	10.6	10.0	8.1	7.0	12.6	10.1	11.7	5.4	5.9	4.3	12.8	7.9
9	10.3	9.4	8.7	7.1	---	---	12.6	6.3	6.5	4.4	12.0	8.0
10	9.3	8.1	9.8	7.7	---	---	14.9	7.6	4.6	3.0	11.1	7.5
11	8.7	7.8	10.4	7.9	---	---	13.7	8.4	4.1	2.9	11.1	7.7
12	9.4	7.4	10.8	6.8	---	---	14.4	7.9	3.8	2.5	11.0	8.2
13	11.9	7.7	12.8	6.1	---	---	15.0	8.1	2.9	2.1	9.0	7.1
14	15.0	9.2	15.0	8.3	---	---	15.0	8.2	3.5	2.2	7.0	6.2
15	15.0	11.7	15.0	10.5	---	---	12.5	7.0	7.1	3.4	6.5	5.9
16	15.0	12.4	15.0	11.1	---	---	---	---	5.9	4.6	6.6	6.1
17	15.0	12.2	15.0	10.8	---	---	---	---	6.2	3.5	6.1	5.2
18	15.0	12.1	14.7	9.5	---	---	---	---	6.3	4.1	6.0	5.7
19	15.0	10.7	15.0	9.3	---	---	---	---	6.7	4.4	5.9	4.9
20	14.9	8.2	15.0	11.5	---	---	---	---	6.8	3.9	6.5	5.3
21	13.6	8.7	15.0	11.1	---	---	---	---	5.5	3.2	6.8	6.5
22	9.9	7.8	15.0	9.7	---	---	---	---	5.1	2.9	7.1	6.8
23	7.8	7.5	15.0	9.2	---	---	---	---	4.4	3.2	7.3	6.9
24	8.1	7.5	15.0	9.0	---	---	---	---	3.7	2.6	7.2	6.8
25	8.5	8.1	15.0	9.6	---	---	---	---	5.3	3.2	7.8	6.7
26	9.0	8.5	15.0	10.4	---	---	---	---	5.6	4.2	8.4	7.0
27	8.9	8.2	15.0	11.1	---	---	---	---	---	---	9.0	7.4
28	8.1	7.4	15.0	10.5	---	---	---	---	---	---	9.5	7.8
29	10.1	7.6	15.0	9.5	---	---	---	---	---	---	11.0	8.3
30	10.6	8.6	15.0	7.4	---	---	---	---	10.4	4.0	10.6	8.2
31	---	---	14.0	8.2	---	---	---	---	10.1	7.4	---	---
MONTH	15.0	7.4	15.0	6.1	15.0	7.4	15.0	5.4	11.3	2.1	12.8	3.8
YEAR	15.0	0.5										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04189000 BLANCHARD RIVER NEAR FINDLAY, OH

LOCATION.--Lat 41°03'21", long 83°41'17", on east line of sec. 10, T.1 N., R.10 E., Hancock County, Hydrologic Unit 04100008, on left bank at upstream side of county road bridge, 2 mi (3 km) west of Findlay, 3 mi (5 km) downstream from Eagle Creek, and 3 mi (5 km) upstream from Aurand Run.

DRAINAGE AREA.--346 mi² (896 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to December 1935, October 1940 to current year. Monthly discharge only for October 1923, published in WSP 1307.

REVISED RECORDS.--WSP 974: 1942. WSP 1054: 1927-30, 1933(M), 1945. WSP 1387: 1926, 1928(M), 1930(M), 1952. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 754.55 ft (229.987 m) above mean sea level. Prior to July 24, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except for those for winter period, which are fair. Water is diverted upstream from station into Findlay Reservoir. Storage in Findlay Reservoir used for water supply of city of Findlay, and is available for low-flow augmentation. All water returns to stream upstream from station. No releases have been made for low-flow augmentation. Sediment data collected at this site 1970-74.

AVERAGE DISCHARGE.--49 years, 242 ft³/s (6.853 m³/s), 9.50 in/yr (241 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s) Feb. 11, 1959, gage height, 16.76 ft (5.108 m) from rating curve extended above 10,000 ft³/s (283 m³/s); minimum daily, 0.4 ft³/s (0.011 m³/s) Aug. 27, Sept. 3, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 18.5 ft (5.64 m); discharge, 22,000 ft³/s (623 m³/s), from rating curve extended above 10,000 ft³/s (283 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,400 ft³/s (68.0 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 17	1330	*3150	89.2	*8.60	2.621	Sept. 19	2100	2640	74.8	7.66	2.335

Minimum daily discharge, 8.4 ft³/s (0.24 m³/s) Feb. 6-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	20	12	10	9.0	472	101	98	33	382	37	29
2	11	19	12	10	8.8	273	476	152	32	519	25	29
3	11	18	11	10	8.8	226	1610	162	33	426	23	125
4	12	18	11	10	8.6	586	1250	878	31	231	23	133
5	14	18	11	10	8.6	897	1830	1090	31	144	56	63
6	33	16	11	9.7	8.4	495	501	803	34	115	63	42
7	19	15	12	9.3	8.4	266	380	443	35	100	41	34
8	14	16	12	8.8	8.4	154	305	293	37	111	69	29
9	14	16	11	8.8	9.0	93	222	174	88	130	41	26
10	13	16	11	8.8	12	104	158	130	50	72	65	24
11	13	16	12	8.8	21	82	126	98	49	55	171	23
12	13	16	12	8.6	18	98	165	83	60	54	327	23
13	12	16	11	8.6	16	291	141	70	57	51	162	79
14	13	15	11	8.6	14	295	126	57	50	42	87	378
15	13	15	11	8.6	16	188	111	48	46	37	60	419
16	12	15	11	8.6	[illegible]	97	97	45	43	37	42	868
17	12	14	11	8.6	[illegible]	69	78	48	121	36	34	2860
18	14	14	11	8.6	59	888	51	51	96	33	30	1840
19	18	15	12	8.8	44	1320	46	54	63	32	26	2040
20	32	14	14	9.0	38	783	41	51	48	34	25	1590
21	20	13	13	9.0	36	479	37	48	42	46	55	555
22	16	14	12	9.2	50	503	42	45	38	250	211	315
23	15	14	11	9.4	219	934	400	37	37	256	188	212
24	22	14	11	9.6	786	954	350	37	36	87	94	153
25	20	13	11	9.6	757	520	168	38	43	52	57	131
26	19	17	11	9.4	566	330	110	38	36	198	42	102
27	19	16	11	9.4	928	241	99	33	36	92	34	93
28	17	14	11	9.4	860	865	142	32	36	48	28	69
29	18	13	11	9.2	---	1150	138	31	39	34	39	59
30	21	13	11	9.2	---	650	108	29	122	29	34	54
31	37	---	11	9.0	---	338	---	30	---	25	32	---
TOTAL	529	463	354	284.6	4635.0	14633	8081	5210	1502	3758	2219	12379
MEAN	17.1	15.4	11.4	9.18	166	472	289	168	50.1	121	71.6	413
MAX	37	20	14	10	928	1320	1610	1090	122	519	327	2860
MIN	11	13	11	8.6	8.4	69	37	29	31	25	23	23
CFSM	.05	.05	.03	.03	.48	1.36	.84	.49	.15	.35	.21	1.19
IN.	.06	.05	.04	.03	.50	1.57	.93	.56	.16	.40	.24	1.33

CAL YR 1976 TOTAL 76347.0 MEAN 209 MAX 6580 MIN 10 CFSM .60 IN 8.21
WTR YR 1977 TOTAL 54647.6 MEAN 150 MAX 2860 MIN 8.4 CFSM .43 IN 5.88

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04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to current year.
pH: July 1968 to current year.
WATER TEMPERATURES: July 1968 to current year.
DISSOLVED OXYGEN: July 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,600 micromhos Feb. 11, 12, 1977; minimum, 134 micromhos Jan. 26, 1976.
pH: Maximum, 9.4 units Feb. 21, 1977; minimum, 3.1 units May 13, 1970.
WATER TEMPERATURES: Maximum, 33.0°C Aug. 27, 28, Sept. 5, 1969; minimum, 0.0°C on several days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on several days during 1972; minimum, 0.0 mg/L June 18, July 2, 3, 1970, Aug. 2, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,600 micromhos Feb. 11, 12; minimum, 255 micromhos Sept. 9.
pH: Maximum, 9.4 units Feb. 21; minimum, 5.4 units July 1.
WATER TEMPERATURES: Maximum, 32.0°C July 15, 20; minimum, 0.0°C on many days during November to March.
DISSOLVED OXYGEN: Maximum, 13.0 mg/L Feb. 26, 27, Mar. 2; minimum, 0.5 mg/L June 26.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 02...	0830	255	585	7.5	.5	12.1	84	4.4	220	120	57	19
JUN 13...	1730	55	850	7.9	21.0	9.0	100	5.6	310	140	76	30

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 02...	18	5.8	120	0	98	6.1	87	39	.3	6.3	242	6.1
JUN 13...	39	4.8	208	0	171	4.2	170	45	.5	1.9	470	3.4

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 02...	.11	2.2	.56	2	20	4	70	6	70	.0	30	11
JUN 13...	.17	.76	1.3	2	10	6	40	5	50	.2	60	6.2

04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	998	881	786	689	1190	1130	1360	1320	1100	1030	543	469
2	972	914	884	791	1270	1180	1340	1250	1100	1050	625	546
3	974	890	935	879	1290	1260	1290	1240	1200	1070	684	627
4	968	854	953	909	1270	1230	1280	1220	1380	1140	697	486
5	849	801	975	921	1290	1230	1300	1260	1320	1260	507	468
6	911	662	1010	944	1290	1190	1290	1260	1260	1240	567	504
7	672	579	1040	974	1260	1160	1290	1260	1240	1100	679	570
8	840	678	992	936	1360	1190	1330	1230	1180	1140	777	676
9	897	821	945	923	1350	1300	1470	1330	1220	1150	837	751
10	921	845	968	900	1320	1280	1500	1310	1490	1160	844	760
11	836	770	1020	968	1320	1260	---	---	1600	1390	892	822
12	866	795	1020	1010	1370	1290	1370	1350	1600	1540	894	772
13	920	840	---	---	1320	1240	1360	1310	1510	1290	786	744
14	944	869	---	---	1320	1280	1300	1250	1290	1190	775	745
15	1010	903	---	---	1300	1250	1280	1220	1280	1190	837	774
16	1020	963	---	---	1360	1270	1370	1280	1420	1150	844	807
17	1020	936	---	---	1340	1280	1400	1370	1170	1020	882	834
18	995	924	---	---	1370	1320	1360	1260	1050	874	895	471
19	963	896	---	---	1350	1310	1260	1210	886	796	523	459
20	947	629	---	---	1300	1180	1260	1200	819	753	570	516
21	734	635	---	---	1280	1170	1240	1200	978	801	652	573
22	879	744	1080	1050	1340	1280	1240	1180	1080	856	690	631
23	929	878	1150	1070	1360	1290	1250	1240	912	660	616	534
24	968	746	1130	1100	1360	1310	1250	1200	637	360	544	514
25	734	698	1140	1080	1340	1270	1330	1230	387	357	627	541
26	825	737	1130	1010	1270	1180	1390	1310	463	385	685	630
27	884	830	1070	924	1270	1200	1420	1320	484	406	748	675
28	911	870	1030	923	1300	1260	1360	1290	468	400	708	499
29	945	882	1140	1010	1380	1260	1350	1260	---	---	528	487
30	963	879	1160	1130	1400	1350	1250	1150	---	---	598	523
31	914	866	---	---	1340	1310	1160	1080	---	---	709	603
MONTH	1020	579	1160	689	1400	1130	1500	1080	1600	357	895	459

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	774	700	870	792	933	859	888	431	733	559	799	759
2	774	573	880	684	951	876	816	540	710	609	783	765
3	552	406	771	751	1020	924	546	489	807	726	786	625
4	444	415	---	---	1010	960	617	549	844	781	709	580
5	531	418	---	---	987	909	669	596	817	514	666	610
6	618	538	---	---	951	894	734	671	594	530	727	667
7	657	609	---	---	985	932	758	719	620	558	747	657
8	697	645	---	---	1040	936	794	731	625	467	745	697
9	729	685	---	---	954	598	801	766	648	535	774	708
10	759	718	---	---	855	733	804	772	717	533	788	720
11	813	733	---	---	873	829	831	794	826	333	795	725
12	819	738	---	---	876	787	880	778	588	406	760	732
13	817	741	---	---	869	798	852	787	616	558	813	445
14	832	783	---	---	905	857	882	784	709	619	640	426
15	856	807	---	---	915	855	850	792	758	696	529	433
16	859	811	---	---	915	887	873	811	772	690	495	330
17	870	801	---	---	929	525	801	768	784	718	348	266
18	874	822	---	---	844	707	805	766	816	741	469	342
19	915	828	---	---	854	803	859	788	849	784	486	255
20	904	829	---	---	858	822	927	855	832	771	441	283
21	932	843	---	---	900	864	892	822	828	601	573	456
22	946	898	---	---	938	900	825	607	619	445	661	577
23	---	---	855	807	959	884	646	376	726	616	711	656
24	---	---	886	849	956	917	546	442	711	676	709	709
25	---	---	900	865	990	858	616	529	750	702	---	---
26	---	---	885	849	858	831	635	521	768	693	---	---
27	909	820	927	876	864	827	674	617	766	693	---	---
28	876	760	915	864	933	867	676	582	768	697	---	---
29	841	759	888	844	1010	864	707	614	753	706	---	---
30	865	794	900	849	897	407	749	639	733	634	---	---
31	---	---	892	846	---	---	727	670	808	718	---	---
MONTH	946	406	927	684	1040	407	927	376	849	333	813	255
YEAR	1600	255										

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.3	7.2	7.4	7.3	7.8	7.8	7.7	7.6	7.4	7.3	7.7	7.6
2	7.2	7.1	7.4	7.3	8.1	7.8	---	---	7.3	7.5	8.2	7.6
3	7.2	7.0	7.5	7.4	8.2	7.8	---	---	7.4	7.2	8.5	7.7
4	7.2	7.1	7.5	7.4	7.8	7.7	---	---	7.4	7.3	7.7	7.6
5	7.2	7.1	7.4	7.3	7.8	7.7	8.0	7.8	7.6	7.5	---	---
6	7.2	7.0	7.4	7.3	7.7	7.5	8.0	7.8	7.6	7.6	7.7	7.6
7	7.2	7.0	7.6	7.4	7.7	7.6	8.0	7.8	7.6	7.5	7.8	7.7
8	7.1	7.0	7.7	7.6	7.8	7.7	8.2	7.7	7.7	7.5	7.9	7.7
9	7.2	7.1	7.6	7.4	7.8	7.7	7.7	7.4	7.7	7.5	7.9	7.7
10	7.1	7.0	7.4	7.3	7.7	7.6	8.1	7.4	7.8	7.6	7.9	7.7
11	7.1	7.0	7.6	7.4	7.9	7.7	---	---	7.8	7.6	7.9	7.6
12	7.2	7.0	7.6	7.5	7.8	7.6	7.5	7.3	7.8	7.7	7.9	7.8
13	7.2	7.0	---	---	7.9	7.7	7.6	7.5	7.8	7.6	7.9	7.8
14	7.2	7.1	---	---	7.9	7.7	7.5	7.3	7.8	7.7	7.9	7.8
15	7.3	7.1	---	---	7.8	7.7	7.4	7.3	7.9	7.8	7.9	7.8
16	7.3	7.2	---	---	7.8	7.7	7.5	7.4	8.0	7.6	7.9	7.8
17	7.3	7.2	---	---	7.8	7.7	7.5	7.3	7.7	7.6	7.9	7.8
18	7.3	7.1	---	---	7.9	7.8	7.4	7.3	7.7	7.6	8.1	7.6
19	7.2	7.1	---	---	7.9	7.7	7.3	7.2	7.7	7.6	7.8	7.6
20	7.2	7.1	---	---	7.9	7.7	7.3	7.2	7.7	7.6	7.8	7.8
21	7.3	7.1	---	---	8.0	7.9	7.3	7.2	9.4	7.6	8.0	7.8
22	7.4	7.3	7.8	7.5	8.0	7.9	7.3	7.2	9.0	7.6	8.0	7.9
23	7.4	7.2	8.0	7.9	8.0	7.8	7.4	7.3	7.6	7.4	8.0	7.7
24	7.2	7.0	8.0	7.8	7.9	7.8	7.4	7.3	7.6	7.4	7.9	7.8
25	7.3	7.0	7.8	7.6	7.9	7.7	7.4	7.4	7.7	7.6	8.0	7.8
26	7.4	7.3	7.6	7.6	7.8	7.7	7.5	7.4	7.7	7.6	8.0	7.8
27	7.4	7.3	7.7	7.6	7.9	7.7	7.5	7.4	7.7	7.6	8.0	7.9
28	7.4	7.2	7.8	7.6	7.8	7.7	7.4	7.3	7.7	7.6	8.0	7.6
29	7.3	7.2	8.1	7.8	8.0	7.8	7.4	7.3	---	---	7.8	7.6
30	7.3	7.2	8.1	7.8	7.9	7.8	7.5	7.4	---	---	7.9	7.7
31	7.3	7.2	---	---	7.9	7.6	7.6	7.3	---	---	8.0	7.9
MONTH	7.4	7.0	8.1	7.3	8.2	7.5	8.2	7.2	9.4	7.2	8.5	7.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.0	7.8	8.1	7.9	7.6	7.5	7.6	5.4	7.3	7.1	7.5	7.2
2	8.0	7.7	7.9	7.9	7.6	7.5	7.7	7.4	7.3	7.1	7.5	7.3
3	7.8	7.6	8.0	7.9	---	---	7.6	7.4	7.2	7.1	7.7	7.3
4	7.8	7.7	---	---	---	---	7.5	6.0	7.2	7.0	7.8	7.5
5	8.0	7.7	---	---	---	---	7.4	6.9	---	---	7.6	7.4
6	8.1	8.0	---	---	---	---	7.5	7.3	---	---	7.6	7.5
7	8.1	8.0	---	---	---	---	7.6	7.4	---	---	7.6	7.4
8	8.2	8.0	---	---	---	---	7.7	7.0	---	---	7.5	7.3
9	8.2	8.0	---	---	---	---	7.6	7.3	---	---	7.5	7.2
10	8.2	7.9	---	---	---	---	8.0	7.5	7.7	7.0	7.4	7.2
11	8.1	7.9	---	---	---	---	7.9	7.2	7.5	6.3	7.4	7.2
12	8.2	7.9	---	---	---	---	7.3	7.0	7.3	6.1	7.4	7.3
13	8.2	7.9	---	---	7.6	7.4	7.5	7.1	7.4	5.8	7.4	6.5
14	8.1	8.1	---	---	7.4	7.2	7.3	7.0	7.3	6.0	7.7	6.7
15	8.1	8.0	---	---	7.3	7.1	7.1	6.8	7.5	6.6	7.7	6.4
16	8.2	7.9	---	---	7.2	7.0	7.0	6.9	7.5	6.1	6.7	6.2
17	8.2	8.1	---	---	7.2	5.5	7.1	7.0	7.5	6.8	6.8	6.4
18	8.2	8.0	---	---	7.4	6.1	7.2	7.1	7.5	7.4	7.1	6.5
19	8.2	7.9	---	---	7.8	7.3	7.1	7.0	7.5	7.4	7.2	6.7
20	8.0	7.8	---	---	7.5	7.3	7.2	7.1	7.5	7.4	7.5	7.2
21	7.9	7.8	---	---	7.4	7.2	7.3	7.1	7.5	6.3	7.6	7.5
22	7.9	7.8	---	---	7.3	7.2	7.7	7.1	7.6	6.0	7.7	7.3
23	---	---	7.5	7.5	7.3	7.1	7.5	7.2	7.7	7.3	7.6	7.1
24	---	---	7.6	7.5	7.2	7.1	7.3	7.1	7.6	7.0	7.4	7.4
25	---	---	7.6	7.4	7.2	7.1	7.3	7.1	7.6	7.3	---	---
26	---	---	7.6	7.5	7.2	7.1	7.5	7.2	7.5	7.1	---	---
27	7.9	7.8	7.6	7.4	7.3	7.2	7.6	7.4	7.4	6.5	---	---
28	8.0	7.9	7.6	7.3	7.3	7.2	7.5	7.3	7.4	7.1	---	---
29	8.1	7.9	7.6	7.4	7.3	7.2	7.3	7.2	7.5	7.3	---	---
30	8.0	7.9	7.6	7.5	7.3	5.9	7.3	7.2	7.5	7.0	---	---
31	---	---	7.6	7.4	---	---	7.2	7.1	7.5	7.0	---	---
MONTH	8.2	7.6	8.1	7.3	7.8	5.5	8.0	5.4	7.7	5.8	7.8	6.2
YEAR	9.4	5.4										

04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.0	14.0	8.0	4.5	1.5	0.5	1.0	0.0	0.0	0.0	1.0	0.0
2	19.0	15.5	9.5	7.5	1.5	0.0	1.0	0.5	0.0	0.0	2.5	0.0
3	19.0	17.0	9.5	7.0	1.0	0.0	1.5	1.0	0.5	0.0	2.5	0.5
4	19.0	16.0	7.5	6.5	1.0	0.5	1.5	1.0	1.0	0.0	2.5	1.0
5	19.0	17.0	7.5	6.0	1.5	0.5	2.0	1.0	0.5	0.5	1.0	0.5
6	18.5	15.5	7.5	5.5	2.0	0.5	1.0	0.5	0.5	0.5	2.5	0.5
7	15.5	13.0	7.5	5.0	3.0	1.5	0.5	0.0	0.5	0.5	3.5	2.5
8	13.5	12.0	5.0	3.5	2.0	1.0	1.0	0.0	1.0	0.5	6.5	2.5
9	13.5	12.0	6.5	3.5	2.0	1.0	1.0	0.5	1.0	1.0	9.0	5.0
10	13.0	11.0	8.0	6.0	2.5	1.0	0.5	0.0	1.5	1.0	10.0	6.5
11	14.0	11.5	7.0	5.0	3.5	1.5	---	---	4.0	1.5	12.0	7.5
12	15.0	12.5	4.5	4.0	4.5	2.5	0.0	0.0	4.0	2.5	11.5	9.5
13	16.5	14.0	---	---	2.5	0.5	0.0	0.0	3.5	2.5	10.5	8.5
14	14.0	12.0	---	---	2.0	1.0	0.5	0.0	3.0	2.0	9.0	8.0
15	14.0	11.5	---	---	4.0	1.5	0.0	0.0	2.0	1.0	11.5	7.5
16	12.0	10.0	---	---	3.5	2.5	0.0	0.0	2.0	0.5	11.5	8.5
17	10.5	8.0	---	---	4.0	2.5	0.0	0.0	2.5	0.0	10.0	7.5
18	9.5	6.5	---	---	4.0	2.0	0.0	0.0	3.0	0.5	7.5	4.0
19	9.5	7.5	---	---	6.5	3.0	0.0	0.0	3.5	1.0	5.5	3.0
20	10.5	9.0	---	---	7.0	2.5	0.0	0.0	2.5	1.0	5.0	4.0
21	9.0	7.5	---	---	2.0	0.0	0.0	0.0	2.5	0.0	6.0	3.5
22	7.5	5.5	5.0	3.5	1.0	0.0	0.0	0.0	5.5	1.0	5.5	4.0
23	7.5	5.0	4.0	2.5	1.0	0.0	0.0	0.0	4.0	1.0	4.5	2.5
24	10.0	7.0	3.5	2.0	0.5	0.0	0.5	0.0	1.0	0.0	5.0	3.0
25	10.0	8.0	6.0	3.0	1.5	0.0	0.5	0.5	1.0	0.0	6.0	3.5
26	8.5	6.0	9.0	6.5	1.0	0.5	0.5	0.0	0.5	0.0	8.0	5.0
27	6.5	5.0	10.0	7.5	0.5	0.5	0.0	0.0	0.5	0.0	9.0	6.5
28	7.0	4.5	7.0	3.0	1.0	0.5	0.0	0.0	0.5	0.0	9.5	9.0
29	7.5	5.0	3.0	0.0	0.5	0.0	0.0	0.0	---	---	12.5	9.5
30	7.5	6.5	1.0	0.0	0.5	0.0	0.0	0.0	---	---	14.0	11.5
31	9.0	6.0	---	---	0.5	0.0	0.0	0.0	---	---	13.0	10.0
MONTH	19.0	4.5	10.0	0.0	7.0	0.0	2.0	0.0	5.5	0.0	14.0	0.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.0	9.0	18.0	12.5	24.0	19.5	23.5	21.0	25.5	22.5		
2	12.0	10.5	17.0	15.5	21.0	18.0	23.0	21.0	26.0	20.5		
3	11.5	10.0	16.0	15.5	24.5	18.0	23.0	20.5	26.5	23.0		
4	10.5	9.5	---	---	25.0	21.0	25.5	22.0	27.5	23.5		
5	10.0	7.0	---	---	24.5	22.0	28.5	23.5	28.0	23.5		
6	7.0	6.0	---	---	23.5	19.5	30.5	25.5	26.5	24.5		
7	6.5	5.5	---	---	20.0	17.5	31.0	26.5	26.0	24.0		
8	8.0	5.0	---	---	19.5	18.0	29.0	26.0	25.5	23.5		
9	9.5	6.0	---	---	21.5	16.0	29.5	26.0	26.0	23.0		
10	13.0	8.0	---	---	23.5	17.5	28.0	24.0	25.5	24.0		
11	16.5	11.5	---	---	22.0	19.0	26.0	23.0	28.0	23.0		
12	18.0	14.0	---	---	20.0	18.0	28.0	24.0	23.5	21.0		
13	19.0	15.5	---	---	21.5	18.0	29.5	24.5	23.0	21.5		
14	19.0	16.0	---	---	23.5	19.5	30.5	24.0	25.0	21.5		
15	18.5	15.0	---	---	25.5	20.5	32.0	27.0	27.0	22.0		
16	19.0	15.0	---	---	27.0	21.5	30.0	27.0	25.0	22.5		
17	19.5	15.5	---	---	26.5	22.0	30.0	25.0	25.0	22.0		
18	20.5	16.0	---	---	26.5	23.0	30.0	26.5	23.5	19.5		
19	19.5	17.0	---	---	27.0	21.5	30.5	26.5	23.0	19.5		
20	21.5	17.0	---	---	26.0	22.5	32.0	27.0	22.0	18.5		
21	20.5	17.5	---	---	28.0	21.5	30.0	27.0	22.0	20.0		
22	19.0	18.0	---	---	24.5	22.0	27.5	23.5	21.0	19.5		
23	---	---	24.5	22.5	25.5	22.0	24.5	22.0	22.0	19.0		
24	---	---	26.5	22.0	26.5	23.5	25.5	21.5	22.0	20.0		
25	---	---	27.5	22.5	27.0	24.0	26.0	23.0	23.0	18.5		
26	---	---	26.5	22.0	29.0	24.0	23.5	21.5	24.5	19.0		
27	17.0	14.0	27.0	21.5	27.5	25.0	24.5	21.0	26.5	23.0		
28	14.0	11.5	28.0	22.0	28.5	25.0	26.0	20.5	27.0	23.5		
29	15.0	10.5	26.5	23.0	26.5	24.0	25.0	22.5	26.5	23.5		
30	16.5	11.5	25.0	21.0	25.5	22.0	27.5	22.0	25.0	21.5		
31	---	---	25.5	22.0	---	---	27.0	24.0	24.5	22.5		
MONTH	21.5	5.0	28.0	12.5	29.0	16.0	32.0	20.5	28.0	18.5		
YEAR	32.0	0.0										

04189000 BLANCHARD RIVER NEAR FINDLAY, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5.3	3.7	6.7	5.6	10.5	7.9	8.4	6.8	9.8	7.4	11.9	11.1
2	4.7	3.3	7.0	6.1	9.4	7.9	8.7	7.0	8.8	7.6	13.0	11.2
3	5.0	3.6	6.7	6.0	10.2	8.8	7.9	6.3	9.0	6.7	12.7	10.7
4	4.9	3.3	6.6	6.1	9.8	8.5	7.5	3.6	9.1	7.9	12.1	10.3
5	5.0	3.3	6.8	6.0	9.7	8.0	6.0	3.7	10.2	8.0	12.2	11.2
6	4.8	3.2	7.6	6.3	8.9	5.8	8.5	5.0	9.8	8.7	12.4	11.7
7	4.4	2.7	7.5	6.1	6.2	5.0	11.2	7.6	10.1	8.9	11.8	10.6
8	5.1	3.9	8.1	6.2	9.3	5.9	12.1	11.2	10.3	9.1	11.6	10.0
9	5.5	3.9	8.2	6.3	10.9	7.3	11.0	8.9	10.4	8.9	10.9	9.8
10	4.5	3.7	7.5	6.1	10.6	7.7	8.4	6.1	8.8	6.7	11.3	10.1
11	5.0	3.6	7.6	5.8	9.8	7.2	---	---	8.4	5.0	10.5	9.1
12	4.7	3.2	6.0	5.4	8.7	7.3	11.1	9.8	7.3	2.7	9.6	7.9
13	4.1	3.5	---	---	11.2	7.9	11.9	10.8	9.5	6.8	10.0	8.2
14	4.2	3.0	---	---	11.3	9.4	11.5	9.7	9.9	8.6	10.5	9.6
15	5.7	3.5	---	---	10.7	7.9	10.0	8.4	9.8	7.3	10.1	8.3
16	7.1	5.1	---	---	8.1	5.4	9.0	7.9	10.5	9.0	9.9	8.1
17	7.0	4.9	---	---	8.8	5.9	9.3	8.4	10.4	8.8	10.0	8.6
18	7.1	5.0	---	---	9.5	7.2	9.3	8.6	10.6	9.0	10.5	8.7
19	6.9	4.9	---	---	8.4	5.2	9.1	8.3	10.7	9.1	10.7	9.4
20	5.9	3.9	---	---	7.0	4.4	9.0	7.6	10.7	9.6	10.2	9.1
21	6.2	4.4	---	---	8.7	6.0	8.3	7.4	10.3	9.5	10.7	9.1
22	8.3	6.0	7.7	6.3	10.5	8.0	8.8	8.1	10.0	7.9	10.5	9.0
23	8.3	6.5	7.7	6.3	11.1	8.6	9.2	8.3	10.7	8.2	10.7	9.6
24	6.4	5.3	9.0	7.4	11.0	8.7	10.0	8.6	11.7	10.9	11.1	9.4
25	5.7	5.0	9.8	7.7	11.1	8.4	10.1	9.3	12.4	11.9	9.9	9.2
26	7.2	5.7	8.2	5.7	10.1	7.2	10.1	9.6	13.0	12.3	9.7	7.4
27	7.5	6.4	6.8	3.6	9.3	7.5	10.8	9.5	13.0	11.0	9.4	8.1
28	7.3	6.7	8.6	5.8	8.3	6.0	11.8	10.2	12.1	11.2	9.1	7.8
29	7.4	6.3	10.3	8.4	7.2	6.5	11.4	9.1	---	---	9.1	7.5
30	6.5	6.0	11.1	10.1	8.6	7.5	10.5	9.3	---	---	8.5	7.6
31	6.3	5.0	---	---	8.6	6.7	10.4	6.9	---	---	10.0	7.7
MONTH	8.3	2.7	11.1	3.6	11.3	4.4	12.1	3.6	13.0	2.7	13.0	7.4

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.4	9.3	10.2	7.7	2.9	0.9	6.0	4.5	3.8	2.0	3.2	2.4
2	9.6	7.7	8.2	7.4	2.9	1.1	6.8	5.8	3.8	2.1	2.9	2.1
3	8.4	7.3	8.2	7.7	3.8	1.3	6.8	6.0	4.3	1.8	5.8	1.9
4	8.2	6.6	---	---	3.5	1.5	5.9	4.8	4.1	2.0	6.0	5.0
5	8.6	7.1	---	---	2.9	0.9	5.1	3.9	4.0	2.0	5.8	3.9
6	9.1	8.4	---	---	3.0	0.6	4.5	3.4	3.7	2.6	4.3	3.1
7	9.5	8.7	---	---	3.4	1.2	5.6	3.1	2.9	2.3	4.6	3.0
8	9.7	8.6	---	---	2.5	1.1	7.3	2.7	4.0	2.0	3.4	2.4
9	10.0	9.0	---	---	5.7	2.8	7.7	4.0	2.8	1.9	3.1	2.3
10	9.3	7.8	---	---	4.8	2.8	10.0	3.6	3.3	1.8	3.2	2.3
11	8.5	6.8	---	---	3.8	2.6	7.6	3.7	6.2	2.3	3.5	2.3
12	9.8	7.6	---	---	4.7	2.7	4.0	2.9	6.0	4.7	3.0	2.3
13	9.2	7.7	---	---	7.5	3.7	7.3	2.8	5.2	4.6	5.0	2.4
14	8.7	7.4	---	---	6.1	3.5	4.7	2.8	4.9	4.3	7.6	4.7
15	9.0	7.5	---	---	6.9	3.4	4.3	2.1	7.0	4.0	7.7	6.9
16	9.1	7.7	---	---	3.7	2.4	3.6	1.7	3.9	3.2	7.5	6.7
17	9.3	7.2	---	---	4.3	1.5	4.7	1.7	4.0	2.8	6.7	5.9
18	8.0	6.3	---	---	6.1	2.2	4.6	1.7	4.0	2.9	7.0	6.2
19	7.8	5.8	---	---	8.9	2.7	4.4	1.4	3.5	3.1	7.0	5.8
20	7.8	6.1	---	---	5.2	3.2	5.0	1.4	3.7	3.2	7.3	5.9
21	7.4	5.7	---	---	3.1	[illegible]	4.0	1.4	4.6	3.0	7.7	7.3
22	6.9	5.0	---	---	2.3	1.1	6.7	0.6	5.9	4.6	7.7	7.0
23	---	---	4.4	2.9	2.6	1.0	5.8	4.4	6.8	5.7	7.0	6.2
24	---	---	3.8	2.7	2.3	0.9	4.4	3.5	5.5	4.8	6.3	6.3
25	---	---	3.5	2.4	2.6	0.9	3.7	2.9	5.3	4.3	---	---
26	---	---	3.5	2.3	2.9	0.5	5.9	2.8	4.6	3.7	---	---
27	9.4	7.7	2.8	1.6	2.8	0.7	5.4	4.3	3.6	2.7	---	---
28	8.8	7.7	2.6	1.3	3.0	0.7	5.5	3.6	4.0	2.5	---	---
29	10.2	8.3	2.8	1.0	3.2	1.3	4.7	2.7	3.5	2.4	---	---
30	10.2	8.2	3.7	1.0	4.8	1.2	4.3	2.3	3.2	1.2	---	---
31	---	---	3.7	0.9	---	---	4.0	2.2	3.5	2.4	---	---
MONTH	10.4	5.0	10.2	0.9	8.9	0.5	10.0	0.6	7.0	1.2	7.7	1.9
YEAR	13.0	0.5										

04191500 AUGLAIZE RIVER NEAR DEFIANCE, OH

LOCATION.--Lat 41°14'15", long 84°23'57", in NE 1/4 sec. 9, T.3 N., R.4 E., Defiance County, Hydrologic Unit 04100007, on right bank 125 ft (38 m) downstream from dam of Toledo Edison Co., 0.2 mi (0.3 km) upstream from Jackson ditch, and 3 mi (5 km) south of Defiance.

DRAINAGE AREA.--2,318 mi² (6,004 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to August 1903 (gage heights only), April 1915 to current year. Monthly discharge only for some periods, published in WSP 1307.

REVISED RECORDS.--WSP 956: 1941. WSP 1912: Drainage area. WDR Ohio 1972: 1966(M).

GAGE.--Water-stage recorder. Datum of gage is 659.70 ft (201.077 m) above mean sea level. May 20 to Aug. 8, 1903, nonrecording gage at site 1.8 mi (2.9 km) downstream at different datum. Apr. 13, 1915, to Dec. 6, 1935, nonrecording gage near right bank on upstream side of dam at datum 6.00 ft (1.829 m) higher, and auxiliary tailwater staff gage near right bank on downstream side of dam at present datum.

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by dam at former powerplant 125 ft (38 m) upstream from station; reservoir capacity, 9,800 acre-ft (12.1 hm³). Operation of plant discontinued Jan. 30, 1963; occasional gate operation subsequently. Some diversion by Miami and Erie Canal from Grand Lake into Jennings Creek, tributary to Auglaize River 70 mi (113 km) upstream from station.

AVERAGE DISCHARGE.--62 years, 1,693 ft³/s (47.95 m³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,500 ft³/s (1,490 m³/s) Feb. 16, 1950, Feb. 12, 1959, gage height, 26.4 ft (8.05 m), from graph based on hourly powerplant tailwater-gage readings, respectively; maximum gage height, 27.65 ft (8.428 m) Feb. 11, 1959, from flood mark (ice jam); minimum daily discharge, 0.5 ft³/s (0.014 m³/s) Oct. 13, 14, 1952, during repairs to powerplant dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 38.8 ft (11.83 m), from reading on powerplant tailwater gage at present datum; discharge, 120,000 ft³/s (3,400 m³/s), from rating curve extended above 51,000 ft³/s (1,440 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,500 ft³/s (496 m³/s) Apr. 23, gage height, 15.10 ft (4.602 m); minimum daily, 3.7 ft³/s (0.10 m³/s) Dec. 7, 8, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	53	4.5	51	46	6800	2340	1260	112	985	100	149
2	90	17	4.2	49	46	4930	1720	1310	84	2070	86	145
3	84	17	4.0	53	46	2060	5230	2130	87	2410	73	190
4	76	17	3.9	53	46	8400	8610	5110	87	1530	80	213
5	73	15	3.8	55	46	10900	5720	9060	81	976	79	208
6	93	13	3.8	57	46	9970	4090	8860	84	642	120	209
7	105	12	3.7	59	46	5990	2210	6030	84	427	137	203
8	134	12	3.7	55	46	4110	1570	3450	71	295	184	222
9	130	10	3.8	52	46	904	1540	1460	93	228	210	174
10	119	8.5	3.8	50	46	958	1370	1320	127	195	219	121
11	102	8.5	4.1	49	50	1480	443	1040	223	188	241	101
12	96	8.0	4.2	48	50	1290	179	786	294	223	565	97
13	76	8.0	4.2	46	70	1210	602	562	205	188	1110	182
14	71	7.0	4.2	45	100	1360	632	500	241	155	1180	1960
15	71	5.2	4.2	46	140	1730	622	427	184	130	807	2980
16	44	4.4	4.3	46	170	1380	573	387	169	112	516	3300
17	44	888	4.4	46	170	985	518	342	223	109	363	4770
18	47	342	4.4	46	160	2540	467	295	205	105	252	6040
19	51	90	4.4	46	150	10400	427	267	174	119	185	5540
20	61	13	4.4	46	150	8650	427	241	179	130	161	6390
21	90	14	4.3	46	150	5600	435	223	174	138	136	5310
22	93	15	4.3	46	160	4130	467	228	147	123	202	3960
23	90	15	4.2	46	490	1300	11300	186	119	118	319	1910
24	102	15	4.2	46	1780	5300	14500	169	99	127	602	980
25	99	15	4.2	46	2240	7850	11800	155	90	184	475	768
26	110	12	4.2	46	3070	4880	6780	147	76	217	371	565
27	1830	8.7	4.2	46	4130	4200	4560	147	78	188	286	427
28	888	8.0	11	46	7030	5030	1040	134	87	167	206	363
29	217	6.8	53	46	---	9010	1020	116	96	157	167	319
30	119	5.5	55	46	---	7220	1460	112	155	157	190	276
31	109	---	59	46	---	4940	---	130	---	165	196	---
TOTAL	5414	1661.6	289.6	1504	20720	144427	92652	47202	4138	13716	9536	48202
MEAN	175	55.4	9.34	48.5	740	4659	3088	1523	138	442	308	1607
MAX	1830	888	59	59	7030	10900	14500	9060	295	2070	1180	6390
MIN	44	4.4	3.7	45	46	904	179	112	71	105	73	97

CAL YR 1976 TOTAL 570622.2 MEAN 1559 MAX 34000 MIN 3.7
WTR YR 1977 TOTAL 389470.2 MEAN 1067 MAX 14500 MIN 3.7

04191500 AUGLAIZE RIVER NEAR DEFIANCE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1966 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
01...	0900	6820	370	7.5	.0	12.4	85	6.8	140	77	38	12
JUN												
14...	1450	238	895	8.3	21.0	11.0	120	5.2	320	160	75	31

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
01...	16	4.7	82	0	67	4.1	50	35	.2	4.9	201	5.3
JUN												
14...	48	4.6	188	2	156	1.5	160	67	.5	.4	480	.67

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
01...	.08	1.1	.46	3	40	10	110	14	70	.0	70	12
JUN												
14...	.10	.25	.16	2	20	4	10	0	20	.0	10	5.7

04193490 MAUMEE RIVER NEAR WATERVILLE, OH

LOCATION.--Lat 41°28'34", long 83°44'20", Lucas County, Hydrologic Unit 04100009, in Bowling Green water-treatment plant, 2.0 mi (3.2 km) upstream from discharge station at Waterville.

DRAINAGE AREA.--6,313 mi² (16,351 km²).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1963 to current year.
pH: May 1963 to current year.
WATER TEMPERATURES: March 1950 to current year.
DISSOLVED OXYGEN: May 1963 to current year.

INSTRUMENTATION.--Water-quality monitor since May 1963. Prior to June 1974 water-quality monitor located in water-treatment plant 2,500 ft (762 m) upstream from discharge station. Prior to May 1963 alcohol-actuated thermograph located at discharge station.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations. See records of daily discharge for gaging station at Waterville (04193500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,260 micromhos Feb. 16, 1977; minimum, 213 micromhos Jan. 30, 1952.
pH: Maximum, 11.4 units Jan. 16, 1965; minimum, 5.0 units Nov. 24, 1968.
WATER TEMPERATURES: Maximum, 34.0°C July 1, 1963; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on several days in 1966, 1967, 1968, 1974 to 1977; minimum, 0.3 mg/L Nov. 10, 1965.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,260 micromhos Feb. 16; minimum, 339 micromhos Mar. 5, 6.
pH: Maximum, 9.7 units Nov. 28; minimum, 7.3 units Apr. 24, 26, May 4, 5.
WATER TEMPERATURES: Maximum, 30.5°C July 20; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on several days during November, December, June and July; minimum, 2.5 mg/L June 27.

04193490 MAUMEE RIVER NEAR WATERVILLE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	816	807	819	801	---	---	1100	1080	1220	1200	498	417
2	822	813	813	807	---	---	1100	1080	1250	1230	435	411
3	828	819	816	810	---	---	1100	1080	1250	1240	441	432
4	828	813	816	807	---	---	1080	1060	1250	1240	441	369
5	825	819	816	810	---	---	1080	1060	1240	1220	369	339
6	828	813	822	807	---	---	1060	1040	1220	1210	369	339
7	825	804	819	813	---	---	1040	1030	1210	1210	384	369
8	810	792	825	816	---	---	1040	1030	1210	1210	420	384
9	795	774	834	825	948	939	1040	1030	1220	1210	435	408
10	798	774	834	828	948	942	1040	1040	1240	1220	456	438
11	801	780	834	819	960	945	1040	1040	1240	1230	456	441
12	786	768	840	828	945	939	1050	1040	1240	1230	495	453
13	774	756	840	831	957	942	1050	1040	1230	1210	534	498
14	762	756	840	834	960	954	1060	1050	1220	1200	552	534
15	765	759	846	837	963	957	1070	1060	1220	1220	552	543
16	762	747	852	846	975	963	1070	1070	1260	1220	570	549
17	765	753	855	843	978	972	1080	1070	1250	1240	585	573
18	771	765	891	843	981	975	1090	1080	1250	1230	615	579
19	774	765	945	894	981	972	1090	1080	1250	1240	630	573
20	771	759	957	948	978	972	1110	1090	1240	1230	630	561
21	774	759	963	957	981	975	1130	1120	1240	1220	570	564
22	762	759	972	963	993	975	1130	1120	1250	1230	567	537
23	762	756	972	894	1010	993	1120	1100	1240	1080	576	552
24	765	756	---	---	1030	1010	1110	1100	1090	1070	600	579
25	762	753	---	---	1060	1030	1120	1110	1200	1070	600	595
26	771	762	---	---	1100	1060	1120	1050	1230	984	612	588
27	783	774	---	---	1100	1090	1080	1080	969	597	588	576
28	792	780	---	---	1100	1090	1100	1080	591	504	576	537
29	795	789	---	---	1100	1090	1110	1100	---	---	534	516
30	807	795	---	---	1090	1070	1160	1110	---	---	516	507
31	813	792	---	---	1100	1080	1200	1160	---	---	516	513
MONTH	828	747	972	801	1100	939	1200	1030	1260	504	630	339

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	528	516	579	570	558	543	699	633	546	522	561	552
2	549	528	594	579	573	555	660	600	546	522	564	543
3	561	543	615	597	576	549	579	486	549	543	549	537
4	564	540	603	480	570	540	576	552	546	534	552	513
5	555	534	489	471	555	540	603	567	543	534	555	525
6	537	510	501	474	561	534	600	579	---	---	600	552
7	519	510	558	504	552	534	576	555	---	---	606	600
8	543	519	564	558	552	540	555	537	573	561	606	576
9	552	543	579	564	558	540	540	534	588	567	606	585
10	564	546	594	579	564	534	537	531	591	567	603	579
11	573	564	597	594	570	543	534	525	603	570	606	552
12	582	573	603	597	597	570	[illegible]	528	591	552	594	555
13	588	582	618	606	618	600	531	528	627	594	588	570
14	603	585	621	612	627	615	531	528	606	597	594	567
15	609	597	630	612	633	615	537	528	606	597	648	534
16	609	594	624	615	627	582	540	537	606	585	651	585
17	603	594	624	546	603	582	543	540	588	561	648	597
18	612	600	567	531	609	597	546	540	612	576	597	516
19	621	606	558	537	630	603	552	543	636	612	543	519
20	642	624	573	546	678	633	561	549	642	633	528	519
21	657	645	588	567	669	606	594	555	636	627	519	486
22	666	627	597	579	633	594	609	573	642	630	495	480
23	606	456	600	582	624	588	579	570	663	642	510	495
24	435	378	606	594	624	600	585	561	687	651	519	510
25	426	378	609	594	636	624	570	564	669	651	528	522
26	471	429	603	579	654	639	579	570	672	660	525	507
27	504	471	591	564	669	654	576	546	666	621	525	504
28	531	504	576	558	759	669	555	519	---	---	513	498
29	561	534	576	564	699	678	531	516	---	---	513	507
30	573	561	576	561	699	672	534	516	576	561	519	513
31	---	---	564	537	---	---	540	519	567	543	---	---
MONTH	666	378	630	471	759	534	699	486	687	522	651	480
YEAR	1260	339										

04193490 MAUMEE RIVER NEAR WATERVILLE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.9	8.5	9.4	9.0	9.0	8.0	8.1	7.6	8.1	7.9	7.5	7.4
2	9.0	8.5	9.2	8.9	8.4	8.0	---	---	8.1	8.0	7.5	7.4
3	8.8	8.4	9.1	8.7	8.5	8.1	---	---	8.0	8.0	7.5	7.4
4	9.1	8.5	9.1	8.8	8.5	8.0	---	---	8.0	7.8	7.5	7.4
5	9.0	8.7	9.2	9.0	8.3	7.9	---	---	8.0	7.9	7.8	7.5
6	8.8	8.5	9.2	9.0	8.1	7.9	---	---	8.1	7.8	7.8	7.6
7	8.8	8.3	9.2	8.9	8.2	7.9	---	---	8.0	7.7	7.7	7.6
8	8.8	8.4	9.3	9.0	8.4	8.0	---	---	8.0	7.7	7.8	7.6
9	9.0	8.8	9.3	9.1	8.4	8.0	---	---	7.9	7.6	7.8	7.6
10	9.1	8.9	9.1	8.8	8.3	7.9	---	---	7.7	7.5	7.9	7.7
11	9.1	8.9	9.2	8.7	8.1	7.8	---	---	7.5	7.4	7.8	7.7
12	9.1	8.6	9.2	8.8	8.1	8.0	---	---	7.6	7.4	7.9	7.7
13	9.1	8.5	9.0	8.7	8.3	7.9	---	---	7.7	7.5	8.0	7.9
14	9.3	8.8	9.0	8.6	8.1	8.0	---	---	7.8	7.5	8.1	8.0
15	9.2	9.0	8.9	8.7	8.2	8.0	8.5	8.2	7.7	7.4	8.2	8.1
16	9.4	9.0	9.0	8.5	8.3	8.1	8.5	8.4	7.6	7.4	8.3	8.1
17	9.5	9.2	9.1	8.7	8.3	8.0	8.6	8.4	7.6	7.5	8.3	8.2
18	9.5	9.3	8.9	8.5	8.3	8.1	8.6	8.2	7.6	7.5	8.3	8.1
19	9.4	9.3	9.1	8.7	8.3	8.2	8.1	7.9	7.6	7.5	8.1	7.9
20	9.4	9.3	9.2	8.7	8.6	8.3	8.1	8.0	7.6	7.5	8.1	7.9
21	9.3	9.2	9.3	8.8	8.9	8.4	8.1	7.9	7.6	7.5	8.0	7.8
22	9.4	9.2	9.1	8.8	8.7	8.2	8.1	7.9	7.7	7.5	8.1	8.0
23	9.3	9.2	9.1	8.7	8.3	8.0	8.0	7.9	7.7	7.5	8.0	7.7
24	9.3	9.0	9.2	9.1	8.2	7.9	8.0	7.8	7.7	7.5	7.8	7.6
25	9.2	9.0	9.3	9.1	8.0	7.9	7.9	7.7	7.7	7.5	7.8	7.6
26	9.2	9.1	9.3	9.1	8.0	7.9	8.2	7.7	7.6	7.5	7.8	7.7
27	9.3	9.1	9.6	9.2	8.0	7.9	8.0	7.9	7.6	7.5	7.8	7.8
28	9.5	9.1	9.7	9.5	8.0	7.8	8.2	8.0	7.6	7.5	7.8	7.6
29	9.4	9.1	9.5	8.7	8.0	7.7	8.4	8.3	---	---	7.7	7.5
30	9.2	9.0	9.0	8.7	7.9	7.6	8.3	8.2	---	---	7.7	7.6
31	9.3	9.0	---	---	7.9	7.6	8.3	8.1	---	---	7.8	7.7
MONTH	9.5	8.3	9.7	8.5	9.0	7.6	8.6	7.6	8.1	7.4	8.3	7.4

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.9	7.8	7.8	7.7	8.8	8.4	8.4	7.8	8.9	8.4	9.0	8.7
2	7.9	7.8	7.8	7.7	8.9	8.3	8.0	7.7	9.0	8.4	9.2	8.8
3	8.0	7.9	7.7	7.7	8.8	8.5	7.8	7.6	8.9	8.6	8.9	8.5
4	8.0	7.9	7.7	7.3	8.9	8.3	7.7	7.5	9.0	8.6	9.2	8.2
5	8.0	7.9	7.4	7.3	8.6	8.1	7.7	7.6	---	---	8.9	8.5
6	8.0	7.9	7.5	7.4	8.9	7.8	7.7	7.6	---	---	8.7	8.0
7	8.0	7.9	7.6	7.5	9.1	8.3	7.7	7.6	---	---	8.9	8.4
8	8.0	7.9	7.9	7.6	9.0	8.7	7.7	7.6	8.7	8.3	8.3	8.1
9	8.0	7.9	8.0	7.9	9.1	8.4	7.7	7.6	8.5	8.2	8.6	7.8
10	8.0	7.9	8.0	7.9	8.8	8.2	7.8	7.6	8.3	8.0	8.7	8.2
11	8.0	7.9	8.0	7.9	8.7	8.1	7.9	7.7	8.5	8.0	8.6	8.1
12	7.9	7.6	8.1	7.9	8.8	7.8	7.8	7.7	8.3	8.0	8.5	8.3
13	7.8	7.6	8.3	8.0	8.7	8.3	7.8	7.7	8.2	8.0	8.4	8.3
14	7.9	7.7	8.4	8.2	8.7	8.4	8.0	7.6	8.1	7.9	8.7	8.2
15	8.1	7.8	8.7	8.3	8.8	8.4	8.1	7.8	8.2	7.9	8.7	8.0
16	8.3	8.0	8.7	8.6	8.9	8.3	8.2	7.9	8.1	7.9	8.1	8.0
17	8.4	8.2	8.7	8.4	8.9	8.3	8.4	7.8	8.3	7.9	8.0	7.6
18	8.5	8.3	8.7	8.2	8.8	8.3	8.7	8.1	8.4	8.0	7.6	7.5
19	8.6	8.4	8.4	8.2	8.9	8.3	8.8	8.4	8.8	8.2	7.5	7.4
20	8.6	8.5	8.4	8.1	9.0	8.5	8.9	8.3	8.7	8.4	7.6	7.5
21	8.5	8.4	8.3	8.0	9.0	8.6	8.7	8.4	8.7	8.4	7.6	7.6
22	8.4	8.2	8.3	7.8	8.8	8.2	8.4	8.2	8.5	8.3	7.6	7.6
23	8.1	7.4	8.2	7.7	9.0	8.4	8.5	8.2	8.5	8.3	7.6	7.6
24	7.4	7.3	8.3	7.8	9.0	8.2	8.4	8.0	8.5	8.3	7.6	7.6
25	7.4	7.4	8.3	7.8	8.7	8.4	8.6	8.2	8.6	8.4	7.7	7.6
26	7.5	7.3	8.7	8.2	8.7	8.2	9.0	8.6	8.8	8.5	7.8	7.7
27	7.5	7.5	8.5	8.1	8.8	7.9	8.9	8.7	8.7	8.3	7.9	7.8
28	7.7	7.5	8.5	8.1	8.7	8.4	9.0	8.5	---	---	7.9	7.8
29	7.8	7.7	8.5	7.9	8.8	8.2	9.1	8.5	---	---	7.9	7.8
30	7.8	7.7	8.6	8.1	8.7	8.4	8.9	8.5	8.6	8.2	7.8	7.8
31	---	---	8.8	8.4	---	---	8.9	8.5	9.1	8.3	---	---
MONTH	8.6	7.3	8.8	7.3	9.1	7.8	9.1	7.5	9.1	7.9	9.2	7.4
YEAR	9.7	7.3										

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.5	15.5	7.0	5.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
2	16.5	15.5	6.5	6.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
3	17.0	16.5	6.5	6.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
4	19.0	16.5	6.5	5.5	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
5	19.0	18.0	5.5	5.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
6	18.5	17.0	5.0	4.0	1.0	0.5	0.0	0.0	0.5	0.0	0.5	0.0
7	17.0	15.0	5.0	4.0	0.5	0.5	0.0	0.0	0.5	0.0	1.0	0.0
8	15.0	13.5	4.5	3.5	0.5	0.5	0.0	0.0	0.5	0.0	2.5	0.5
9	14.0	13.0	3.5	2.5	0.5	0.5	0.0	0.0	0.5	0.0	3.5	2.0
10	13.0	12.0	3.5	3.0	0.5	0.5	0.0	0.0	0.5	0.0	4.5	2.0
11	13.5	12.0	3.5	3.5	0.5	0.5	0.0	0.0	0.0	0.0	5.5	3.0
12	14.5	13.0	3.5	3.0	1.0	0.5	0.0	0.0	0.0	0.0	6.5	4.5
13	16.0	14.0	3.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	6.5	6.0
14	15.0	14.0	3.0	2.0	1.0	1.0	0.0	0.0	0.0	0.0	7.5	6.5
15	14.5	13.0	3.0	2.0	1.5	1.0	0.0	0.0	0.0	0.0	9.5	6.5
16	13.0	12.0	3.5	3.0	1.5	1.0	0.0	0.0	0.0	0.0	9.5	8.0
17	12.0	11.5	3.0	2.5	1.5	1.0	0.0	0.0	0.0	0.0	8.5	7.0
18	11.5	10.5	2.5	2.0	1.5	1.5	0.5	0.0	0.0	0.0	7.0	4.5
19	10.5	9.5	4.0	2.5	1.5	1.5	0.0	0.0	0.0	0.0	5.5	3.0
20	9.5	8.5	3.5	3.0	2.0	1.5	0.5	0.0	0.0	0.0	5.0	4.0
21	8.5	7.5	3.5	3.0	2.0	1.5	0.0	0.0	0.0	0.0	5.5	3.5
22	7.5	6.5	3.0	1.5	2.0	2.0	0.5	0.0	0.0	0.0	4.5	3.0
23	6.5	6.0	1.0	0.5	2.0	1.5	0.5	0.0	0.0	0.0	4.5	2.5
24	7.0	6.5	1.5	1.0	1.5	1.5	0.5	0.0	0.0	0.0	4.5	2.0
25	7.0	7.0	1.5	1.5	1.5	1.0	0.5	0.0	0.0	0.0	5.0	3.0
26	7.0	6.5	3.0	1.5	1.5	1.0	0.5	0.0	0.0	0.0	5.5	3.5
27	6.5	5.5	4.5	3.0	1.0	0.5	0.0	0.0	0.0	0.0	6.0	4.5
28	6.0	4.5	4.5	3.0	1.0	0.5	0.0	0.0	0.0	0.0	7.5	6.5
29	6.0	5.0	3.5	0.0	0.5	0.5	0.0	0.0	---	---	10.0	7.0
30	6.0	5.5	0.5	0.0	0.5	0.5	0.0	0.0	---	---	11.5	9.5
31	6.0	5.5	---	---	0.5	0.0	0.0	0.0	---	---	11.0	10.0
MONTH	19.0	4.5	7.0	0.0	2.0	0.0	0.5	0.0	0.5	0.0	11.5	0.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	10.0	15.5	13.0	22.5	20.5	23.5	21.5	26.5	25.5	27.0	25.5
2	12.0	10.0	15.5	14.0	20.0	19.0	23.5	21.0	26.5	25.0	28.0	26.0
3	12.0	10.0	14.0	13.0	21.0	18.5	23.5	21.0	26.5	25.0	26.5	25.5
4	10.5	10.0	13.0	12.0	22.0	19.0	25.0	22.0	27.0	25.0	26.5	24.5
5	10.5	8.5	15.5	12.5	21.5	21.0	27.0	24.0	27.5	25.5	25.0	24.5
6	8.5	7.5	16.5	15.5	21.0	20.0	28.0	26.0	---	---	25.0	24.0
7	8.0	7.0	17.0	15.0	20.5	19.0	28.5	27.0	---	---	24.0	23.5
8	8.5	6.0	17.5	15.5	19.5	18.5	27.5	27.0	26.0	25.0	24.0	23.5
9	9.0	6.5	16.0	14.0	19.5	17.0	28.0	27.0	25.5	25.0	25.0	23.0
10	10.5	7.5	17.0	14.0	19.0	18.5	28.0	26.0	25.5	24.5	24.0	23.0
11	13.0	9.5	18.0	15.0	20.0	19.0	26.0	25.0	26.0	24.5	23.0	21.5
12	14.5	11.5	18.0	16.5	18.5	18.0	[illegible]	25.0	25.5	23.5	23.0	21.0
13	16.0	13.5	20.0	16.5	18.5	17.5	27.0	25.5	25.0	23.5	21.0	20.5
14	16.0	14.5	19.5	18.5	20.0	18.5	27.0	26.0	25.5	23.5	20.5	19.5
15	16.0	14.0	20.0	18.0	21.5	20.0	30.0	26.5	25.5	24.0	20.5	18.5
16	16.0	14.5	20.0	18.5	25.0	21.0	29.5	28.5	25.0	24.5	19.5	18.5
17	16.5	15.5	23.0	20.0	25.0	23.0	29.0	27.5	25.0	23.5	20.5	19.0
18	17.5	16.0	24.5	22.0	25.5	24.5	30.0	28.0	24.5	22.5	20.5	19.5
19	18.5	17.0	24.5	23.0	26.0	23.5	30.0	28.0	23.0	22.0	20.5	20.0
20	19.5	18.0	24.5	23.5	26.0	23.5	30.5	28.5	22.0	21.5	20.0	19.0
21	19.5	18.5	25.5	23.5	24.5	23.0	30.0	28.5	22.0	21.5	19.0	18.5
22	19.5	17.0	25.5	24.5	25.0	23.0	28.5	26.5	22.5	21.0	19.5	18.0
23	16.5	12.5	24.5	24.0	25.5	23.0	26.5	25.5	23.0	22.0	19.5	18.5
24	12.5	12.0	25.0	24.0	26.5	23.5	26.5	25.0	23.0	22.5	19.5	19.0
25	12.0	11.0	25.0	24.5	26.0	24.5	27.0	25.5	23.0	22.0	20.0	19.0
26	12.5	10.5	25.5	24.0	27.0	24.5	26.0	25.0	24.0	22.0	20.5	19.5
27	13.5	11.0	24.5	23.0	28.0	25.5	25.5	24.5	25.5	23.0	20.0	19.0
28	13.0	11.5	25.0	23.5	27.5	25.5	26.5	24.0	---	---	19.0	18.0
29	13.5	10.5	24.5	23.5	26.5	25.0	26.5	24.5	---	---	18.5	17.5
30	15.0	11.5	23.0	22.0	25.0	23.5	27.0	25.0	25.0	24.0	18.5	17.5
31	---	---	23.0	21.0	---	---	27.0	25.5	27.0	24.0	---	---
MONTH	19.5	6.0	25.5	12.0	28.0	17.0	30.5	21.0	27.5	21.0	28.0	17.5
YEAR	30.5	0.0										

04193490 MAUMEE RIVER NEAR WATERVILLE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	9.1	6.7	12.1	10.3	15.0	14.3	12.3	11.9	10.4	9.9	10.2	9.9
2	9.1	6.2	11.7	10.8	14.6	14.2	12.2	11.6	10.0	9.5	10.4	10.1
3	7.2	5.4	11.6	10.4	14.5	13.9	12.4	12.0	9.6	9.3	10.5	10.3
4	12.3	5.6	11.5	10.4	14.9	13.8	12.0	11.7	9.5	9.3	10.5	10.4
5	9.6	6.1	11.9	10.4	14.9	14.2	12.1	11.9	9.6	8.9	10.4	10.2
6	7.6	5.2	12.2	10.6	14.2	13.3	12.0	11.9	9.7	8.3	10.7	9.6
7	6.7	5.2	12.6	11.1	14.0	13.3	12.0	11.8	8.9	8.0	10.9	10.5
8	9.5	5.8	12.8	11.6	14.0	13.2	12.1	11.9	9.3	7.8	11.1	11.0
9	10.2	8.0	12.7	11.8	14.3	13.4	12.0	11.7	8.8	7.8	11.2	10.9
10	10.6	8.3	13.3	11.9	14.4	13.5	11.7	11.5	9.2	8.2	11.1	10.9
11	12.2	8.5	13.5	12.6	14.7	13.5	11.5	11.3	8.8	8.4	11.2	10.9
12	11.9	8.7	13.7	12.6	15.0	13.7	11.3	10.8	9.5	8.7	11.0	10.5
13	11.8	9.5	13.4	12.4	15.0	14.3	10.9	10.6	10.0	9.3	10.8	10.4
14	11.1	7.8	13.8	12.3	15.0	14.2	10.7	10.5	10.4	9.5	10.7	10.5
15	11.0	7.9	14.1	12.7	15.0	14.4	11.0	10.5	10.2	9.4	10.7	10.1
16	10.9	9.4	14.7	13.1	15.0	14.2	11.1	10.9	10.8	8.8	10.7	9.9
17	10.8	8.9	14.1	13.0	15.0	14.5	11.4	11.2	9.8	8.1	10.2	9.7
18	9.8	9.1	12.9	11.9	14.9	13.7	11.6	11.2	9.4	7.9	10.5	9.8
19	10.2	9.1	13.1	11.7	15.0	13.6	11.1	11.0	9.2	7.7	10.8	10.4
20	10.0	9.1	13.2	11.5	15.0	14.0	11.4	11.0	9.6	7.9	10.6	10.7
21	10.7	9.4	13.0	11.4	15.0	14.3	11.4	11.2	9.6	8.1	10.6	10.3
22	11.3	10.2	12.4	11.4	15.0	13.6	11.7	11.1	10.0	8.0	10.7	10.3
23	11.6	10.6	12.8	10.7	14.7	14.0	11.3	10.8	10.3	8.4	11.2	10.6
24	11.5	10.3	12.6	12.0	14.1	13.4	11.2	10.8	10.2	8.5	11.3	10.8
25	11.4	10.3	14.1	11.8	13.7	12.9	11.4	11.3	9.0	8.5	11.1	10.7
26	11.6	10.7	13.3	12.5	14.3	12.7	11.6	11.0	9.0	7.8	10.8	10.6
27	12.0	10.8	13.3	12.1	14.1	13.2	11.1	10.6	9.7	8.5	10.7	10.3
28	12.1	11.4	13.9	11.1	13.2	12.7	10.6	9.9	9.9	9.8	10.2	9.8
29	11.5	10.7	13.3	11.8	12.9	12.4	10.3	9.8	---	---	9.8	9.2
30	10.9	10.0	15.0	12.4	12.6	11.9	10.5	10.2	---	---	9.2	8.8
31	11.2	9.4	---	---	12.3	11.9	10.6	10.3	---	---	9.1	8.8
MONTH	12.3	5.2	15.0	10.3	15.0	11.9	12.4	9.8	10.8	7.7	11.3	8.8

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.1	8.9	8.7	7.8	---	---	6.3	2.9	14.0	8.4	10.0	6.7
2	9.0	8.8	8.4	8.0	---	---	5.8	4.0	13.7	8.6	11.0	6.6
3	9.1	8.7	8.8	8.0	---	---	4.1	3.6	12.0	7.6	9.7	5.9
4	9.1	8.9	8.0	7.5	---	---	6.7	3.5	13.1	9.0	14.1	4.6
5	9.4	8.9	7.6	7.4	---	---	7.4	6.7	---	---	11.1	7.4
6	9.6	9.4	7.8	7.4	---	---	7.6	7.1	---	---	8.5	4.7
7	9.7	9.5	8.1	7.6	---	---	6.9	4.4	---	---	8.5	3.4
8	9.8	9.5	8.1	7.8	---	---	7.0	4.9	10.7	7.2	---	---
9	10.2	9.6	8.5	7.9	---	---	6.3	4.7	9.8	7.3	---	---
10	9.8	9.3	8.6	4.4	---	---	7.2	4.8	8.7	6.1	---	---
11	9.3	9.0	6.5	3.0	---	---	7.4	6.5	8.1	5.5	---	---
12	9.7	8.7	7.9	5.4	---	---	7.3	6.3	7.4	5.1	---	---
13	9.6	8.9	7.9	6.6	---	---	7.4	6.4	6.8	5.9	---	---
14	9.9	8.5	7.8	6.5	---	---	7.2	5.3	6.8	5.2	---	---
15	10.6	8.7	8.0	5.5	---	---	8.3	5.8	7.5	4.8	---	---
16	11.5	9.0	8.6	5.8	15.0	9.0	8.8	6.7	6.3	5.1	---	---
17	12.1	9.5	8.2	6.9	14.2	10.5	10.2	5.6	7.2	4.9	---	---
18	12.5	9.8	7.7	6.8	11.0	6.9	13.0	7.4	7.8	5.2	---	---
19	12.9	9.9	8.3	6.7	10.0	5.2	12.9	9.0	9.3	5.7	---	---
20	12.3	9.1	---	---	11.3	6.3	12.9	7.5	8.2	5.6	---	---
21	11.3	8.7	---	---	13.4	7.9	11.3	6.6	8.2	6.1	---	---
22	10.6	8.0	---	---	13.7	6.0	9.0	5.3	7.2	5.4	---	---
23	8.7	7.5	---	---	13.5	8.4	10.6	7.7	7.9	5.8	---	---
24	7.6	6.3	---	---	12.6	7.3	9.4	5.9	7.6	5.3	---	---
25	8.1	7.5	---	---	9.7	6.6	10.3	7.7	7.6	6.0	---	---
26	8.3	7.8	---	---	9.5	4.3	13.7	8.9	9.8	6.5	---	---
27	8.5	8.3	---	---	10.6	2.5	15.0	10.9	9.3	5.4	---	---
28	8.9	8.3	---	---	7.7	5.4	15.0	12.2	---	---	---	---
29	9.0	8.6	---	---	8.4	3.2	15.0	12.8	---	---	---	---
30	8.9	7.3	---	---	6.0	4.0	15.0	10.0	---	---	---	---
31	---	---	---	---	---	---	13.7	11.2	12.9	4.1	---	---
MONTH	12.9	6.3	8.8	3.0	15.0	2.5	15.0	2.9	14.0	4.1	14.1	3.4
YEAR	15.0	2.5										

04193500 MAUMEE RIVER AT WATERVILLE, OH
(National stream-quality accounting network station)

LOCATION.--Lat 41°30'00", long 83°42'46", Lucas County, Hydrologic Unit 04100009, on downstream side of second pier from left end of bridge on State Highway 64 at Waterville, 3 mi (5 km) downstream from Tontogany Creek, and 20.7 mi (33.3 km) upstream from mouth.

DRAINAGE AREA.--6,330 mi^2 (16,395 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1898 to December 1901, August 1921 to December 1935, March 1939 to current year.

REVISED RECORDS.--WSP 894: 1930(M). WSP 1084: 1946. WSP 1387: 1900(M), 1922-23, 1933. WRD Ohio 1568: 1967. WRD Ohio 1970: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 595.71 ft (181.572 m) above mean sea level. Nov. 19, 1898, to Dec. 31, 1901, Aug. 26, 1921 to July 31, 1930, nonrecording gage, Aug. 1, 1930 to Dec. 31, 1935, water-stage recorder, Mar. 14, 1939 to Mar. 12, 1940 nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair. Low flow slightly regulated by powerplants upstream from station. Small diversion upstream from gage into Portage River basin (see station 04195500).

AVERAGE DISCHARGE.--52 years (1921-35, 1939-77) 4,786 ft^3/s (135.5 m^3/s), 10.27 in/yr (261 mm/yr); includes flow in Miami and Erie Canal at Waterville 1922-29; canal was abandoned in 1929 and was filled in prior to March 1939.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,000 ft^3/s (2,660 m^3/s) Feb. 16, 1950, gage height, 14.52 ft (4.426 m); maximum gage height, 16.17 ft (4.929 m) Feb. 12, 1959 (ice jam); practically no flow at times prior to June 30, 1929, when entire river flow was being diverted by canal; minimum daily since canal was abandoned, 26 ft^3/s (0.74 m^3/s) Oct. 24, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 19.9 ft (6.07 m), from information by local resident, estimated discharge, 180,000 ft^3/s (5,100 m^3/s), from rating curve extended above 94,000 ft^3/s (2,660 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57,500 ft^3/s (1,628 m^3/s) Apr. 24, gage height, 11.61 ft (3.539 m); minimum daily, 137 ft^3/s (3.88 m^3/s) Oct. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	433	397	250	700	220	14000	13000	6680	702	6390	330	693
2	295	446	720	620	220	12000	14000	5820	440	11500	287	574
3	280	407	650	560	210	9500	17000	9630	375	9250	299	447
4	284	317	550	500	210	13000	15000	13200	448	5990	276	509
5	310	348	480	460	200	26800	13000	22300	481	4110	322	758
6	481	398	420	430	200	34300	12000	21000	476	2760	1550	647
7	535	286	360	400	200	25600	10000	15400	353	2130	1620	662
8	426	306	330	370	200	18600	8800	10700	354	1500	1380	588
9	636	314	310	340	210	14200	7000	7130	550	1160	1850	574
10	615	248	290	320	230	10400	5400	4960	658	983	1650	509
11	523	229	270	300	350	10200	4000	4290	673	965	1690	280
12	463	255	250	290	800	9170	3300	3530	880	934	3010	246
13	517	331	220	280	1400	8340	2880	2900	874	821	4160	432
14	295	220	200	270	1700	7200	2570	2050	966	866	3880	1080
15	380	201	190	280	1500	6460	2610	2140	864	798	2610	3990
16	216	231	180	270	1300	5680	2340	1730	797	654	1900	5470
17	137	277	170	260	1100	4490	2240	1520	852	662	2050	7800
18	203	1100	160	250	1000	4650	1860	1590	1100	524	1940	10900
19	195	754	150	240	920	12800	1870	1160	998	515	1210	10300
20	752	489	200	240	880	20000	2080	1210	810	597	837	10500
21	875	325	300	230	860	16300	1960	1050	581	899	1220	9570
22	419	433	900	230	860	13300	2070	1020	579	1190	1100	7600
23	216	320	780	230	1000	9430	24100	988	518	1000	1060	5030
24	327	148	700	230	2200	8970	56200	913	417	662	1040	3260
25	380	185	620	230	3500	14000	48800	889	447	596	1140	2290
26	363	328	560	230	5000	14400	32900	750	336	439	1020	1910
27	500	419	1500	230	7000	12400	20700	829	421	445	897	1540
28	2680	215	1200	220	11000	14600	13200	845	823	388	725	1590
29	1160	468	1000	220	---	23500	8170	579	1180	404	647	1340
30	476	396	900	230	---	20000	7980	632	713	398	603	1490
31	493	---	800	230	---	16000	---	675	---	415	574	---
TOTAL	15865	10711	15610	9890	44470	430290	357030	148110	19666	59945	42877	93379
MEAN	512	357	504	319	1588	13880	11900	4778	656	1934	1383	3113
MAX	2680	1100	1500	700	11000	34300	56200	22300	1180	11500	4160	10900
MIN	137	148	150	220	200	4490	1860	579	336	388	276	246
CFSM	.08	.06	.08	.05	.25	2.19	1.88	.76	.10	.31	.22	.49
IN.	.09	.06	.09	.06	.26	2.53	2.10	.87	.12	.35	.25	.55

CAL YR 1976 TOTAL 1751361 MEAN 4785 MAX 68500 MIN 100 CFSM .76 IN 10.29
WTR YR 1977 TOTAL 1247843 MEAN 3419 MAX 56200 MIN 137 CFSM .54 IN 7.33

04193500 MAUMEE RIVER AT WATERVILLE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: April 1950 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,240 mg/L Mar. 26, 1954; minimum daily mean, 1 mg/L on many days during 1953, 1955, and 1963.
SEDIMENT LOADS: Maximum daily, 208,000 tons (189,000 tonnes) Feb. 12, 1959; minimum daily, 0.26 ton (0.24 tonne) Sept. 18, 1955.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 885 mg/L Mar. 5; minimum daily mean, 2 mg/L on many days during November and December.
SEDIMENT LOADS: Maximum daily, 94,800 tons (86,000 tonnes) Apr. 24; minimum daily, 0.97 ton (0.88 tonne) Dec. 16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM .7UM-MF (COL./100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)
OCT 26...	1230	363	775	8.8	7.0	5	12.7	100	8	20	250
NOV 17...	1230	225	850	8.9	4.5	--	15.5	120	3	5	--
DEC 20...	1300	200	960	8.6	.5	--	15.2	110	2	28	--
JAN 25...	1200	230	1090	8.0	1.5	--	13.0	93	33	3	--
FEB 16...	1330	1300	1080	7.5	.0	6	22.0	150	5	7	400
MAR 23...	1330	9620	550	7.9	4.5	--	11.8	91	170	1000	--
APR 20...	1230	2060	720	9.0	22.0	20	14.4	160	56	21	250
MAY 25...	1330	968	540	8.7	28.0	--	13.5	170	27	200	--
JUN 22...	1330	588	620	9.0	28.0	--	14.2	180	120	130	--
JUL 19...	1400	493	500	8.7	32.5	5	13.8	190	59	550	220
AUG 30...	1430	683	540	8.4	28.5	--	12.8	160	130	860	--
SEP 20...	1530	10900	480	7.7	20.0	--	6.8	74	790	4400	--

DATE	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)
OCT 26...	91	60	25	56	6.8	197	--	162	.5	130	71
NOV 17...	--	--	--	--	--	--	--	--	--	--	--
DEC 20...	--	--	--	--	--	--	--	--	--	--	--
JAN 25...	--	--	--	--	--	--	--	--	--	--	--
FEB 16...	120	94	39	90	9.1	338	0	277	17	170	110
MAR 23...	--	--	--	--	--	--	--	--	--	--	--
APR 20...	110	68	20	19	3.8	170	0	140	.3	83	37
MAY 25...	--	--	--	--	--	--	--	--	--	--	--
JUN 22...	--	--	--	--	--	--	--	--	--	--	--
JUL 19...	100	60	16	17	4.1	140	0	110	.4	62	29
AUG 30...	--	--	--	--	--	--	--	--	--	--	--
SEP 20...	--	--	--	--	--	--	--	--	--	--	--

04193500 MAUMEE RIVER AT WATERVILLE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (NO3) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL PHYTO-PLANK-TON (CELLS PER ML)
OCT											
26...	.7	.1	455	447	.01	1.2	1.2	5.4	.16	11	59000
NOV											
17...	--	--	--	--	.38	1.4	1.8	7.9	.15	--	60000
DEC											
20...	--	--	--	--	1.1	1.6	2.7	12	.18	--	11000
JAN											
25...	--	--	--	--	1.8	2.8	4.6	20	.28	--	1900
FEB											
16...	1.0	4.0	768	684	1.8	3.9	5.7	25	.59	8.7	4300
MAR											
23...	--	--	--	--	9.4	1.7	11	49	.23	--	1100
APR											
20...	.2	2.5	457	318	3.6	1.7	5.3	23	.13	7.1	22000
MAY											
25...	--	--	--	--	3.5	1.3	4.8	21	.04	--	14000
JUN											
22...	--	--	--	--	.00	2.0	2.0	8.9	.16	--	94000
JUL											
19...	.3	6.1	499	264	7.0	1.6	8.6	38	.14	6.1	--
AUG											
30...	--	--	--	--	1.7	1.1	2.8	12	.19	--	--
SEP											
20...	--	--	--	--	4.0	2.1	6.1	27	.44	--	--

ANALYSES OF MINOR ELEMENTS

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL CAD-MIUM (CD) (UG/L)	DIS-SOLVED CAD-MIUM (CD) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT												
26...	1230	3	2	1	0	<10	<10	0	0	10	0	230
FEB												
16...	1330	2	2	0	0	<10	<10	0	0	20	20	130
APR												
20...	1230	2	2	0	0	<10	8	0	0	6	6	540
JUL												
19...	1400	2	2	0	0	10	0	0	0	9	9	1000

DATE	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELE-NIUM (SE) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT											
26...	20	7	6	60	10	<.5	<.5	0	0	10	10
FEB											
16...	50	7	0	150	150	<.5	<.5	0	0	60	30
APR											
20...	190	4	4	30	30	.2	.0	1	1	50	50
JUL											
19...	20	6	6	40	0	.0	.0	0	0	50	50

04193500 MAUMEE RIVER AT WATERVILLE, OH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM
MAR 06...	1815	27800	806	60500	62	71	77
SEP 20...	1440	10900	156	4590	78	90	93

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM
MAR 06...	82	85	89	95	98	100
SEP 20...	97	99	99	100	--	--

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	TEMPERATURE (DEG C)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT 26...	1230	363	7.0	8	7.8
NOV 17...	1230	225	4.5	6	3.6
DEC 20...	1300	288	.5	6	3.2
JAN 25...	1200	230	1.5	2	1.2
FEB 16...	1330	1300	.0	16	56
MAR 23...	1330	9620	4.5	92	2390
APR 20...	1230	2060	22.0	42	234
MAY 25...	1330	968	28.0	16	42
JUN 22...	1330	588	28.0	17	27
JUL 19...	1400	493	32.5	33	44
AUG 30...	1430	603	28.5	39	63
SEP 20...	1530	10900	20.0	156	4590

04193500 MAUMEE RIVER AT WATERVILLE, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	33	39	3	3.2	3	2.0	4	7.6	3	1.8	205	7750
2	28	22	3	3.6	3	5.8	4	6.7	3	1.8	222	7190
3	28	21	6	6.6	3	5.3	4	6.0	3	1.7	128	3280
4	30	23	7	6.0	3	4.5	4	5.4	3	1.7	482	19000
5	32	27	4	3.8	3	3.9	4	5.0	3	1.6	885	64000
6	33	43	3	3.2	3	3.4	4	4.6	4	2.2	740	68500
7	36	52	2	1.5	3	2.9	4	4.3	4	2.2	530	36600
8	36	41	2	1.7	3	2.7	4	4.0	4	2.2	324	16300
9	35	60	3	2.5	2	1.7	4	3.7	4	2.3	192	7360
10	31	51	5	3.3	2	1.6	4	3.5	4	2.5	150	4210
11	28	40	6	3.7	2	1.5	4	3.2	4	3.8	123	3390
12	29	36	5	3.4	2	1.4	3	2.3	5	11	101	2500
13	42	59	5	4.5	2	1.2	3	2.3	7	26	84	1890
14	27	22	5	3.0	2	1.1	3	2.2	8	37	72	1400
15	25	26	4	2.2	2	1.0	3	2.3	10	40	67	1170
16	29	17	4	2.5	2	0.97	3	2.2	15	53	69	1060
17	23	8.5	5	3.7	3	1.4	4	2.8	15	45	65	788
18	17	9.3	7	21	4	1.7	4	2.7	15	40	55	691
19	12	6.3	7	14	5	2.0	4	2.6	15	37	90	3480
20	20	41	4	4.4	6	3.2	4	2.6	15	36	355	19200
21	18	43	5	4.4	6	4.9	4	2.5	15	35	217	9550
22	10	11	5	5.8	6	15	4	2.5	20	46	145	5210
23	8	4.7	5	4.3	6	13	4	2.5	20	54	97	2470
24	8	7.1	5	2.0	5	9.5	3	1.9	20	119	67	1620
25	8	8.2	5	2.5	5	8.4	3	1.9	23	217	70	2650
26	7	6.9	5	4.4	5	7.6	3	1.9	30	405	73	2840
27	3	4.1	3	3.4	5	20	3	1.9	54	1020	70	2340
28	10	72	3	1.7	5	16	3	1.8	110	3270	88	3470
29	10	31	3	3.8	5	13	3	1.8	---	---	237	15000
30	8	10	3	3.2	4	9.7	3	1.9	---	---	362	19500
31	7	9.3	---	---	4	8.6	3	1.9	---	---	283	12200
TOTAL	---	851.4	---	133.3	---	174.97	---	98.5	---	5514.8	---	346609
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	228	8000	58	1050	15	28	78	1450	42	37	37	69
2	193	7300	52	817	14	17	170	5280	28	22	27	42
3	175	8030	56	1460	14	14	263	6570	26	21	23	28
4	198	8020	108	3850	14	17	213	3440	26	19	23	32
5	237	8320	203	12200	21	27	153	1700	30	26	29	59
6	256	8290	248	14100	20	26	119	887	55	230	35	61
7	217	5860	189	7860	21	20	89	512	52	227	36	64
8	148	3520	120	3470	18	17	66	267	45	168	39	62
9	108	2040	80	1540	28	42	128	401	48	240	37	57
10	99	1440	53	710	40	71	150	398	69	307	42	58
11	94	1020	38	440	35	64	102	266	49	224	34	26
12	80	713	33	315	37	88	100	252	57	463	27	18
13	70	544	29	227	45	106	100	222	94	1060	20	23
14	54	375	23	127	39	102	78	182	74	775	27	79
15	48	338	20	116	34	79	63	136	67	472	90	970
16	42	265	22	103	26	56	55	97	58	298	73	1080
17	38	230	27	111	27	62	53	95	63	349	98	2060
18	33	166	19	82	37	110	47	66	60	314	185	5440
19	32	162	13	41	30	81	37	51	40	131	203	5650
20	34	191	11	36	29	63	39	63	33	75	160	4540
21	33	175	14	40	28	44	45	109	33	109	129	3330
22	38	212	12	33	19	30	53	170	42	125	110	2260
23	515	42900	14	37	20	28	47	127	89	255	97	1530
24	625	94800	14	35	24	27	41	73	72	202	85	748
25	389	51300	14	34	17	21	40	64	67	206	80	495
26	233	20700	12	24	16	15	46	55	33	91	87	449
27	166	9280	14	31	24	27	33	40	48	116	95	395
28	127	4530	14	32	57	127	22	23	39	76	93	399
29	98	1990	20	31	66	210	10	11	35	61	92	333
30	64	1380	25	43	36	69	18	19	32	52	92	370
31	---	---	21	38	---	---	45	50	33	51	---	---
TOTAL	---	292091	---	49033	---	1688	---	23076	---	6802	---	30727

TOTAL LOAD FOR YEAR: 756799.0 TONS.

04195500 PORTAGE RIVER AT WOODVILLE, OH

LOCATION.--Lat 41°26'58", long 83°21'41", in sec. 28, T.6 N., R.13 E., Sandusky County, Hydrologic Unit 04100010, on left bank at upstream side of bridge on U.S. Highway 20 in Woodville, 600 ft (183 m) downstream from unnamed right bank tributary, and 10.3 mi (16.6 km) upstream from Sugar Creek.

DRAINAGE AREA.--428 mi² (1,109 km²).

PERIOD OF RECORD.--July 1928 to December 1935, October 1939 to current year.

REVISED RECORDS.--WSP 898: 1929-30. WSP 1207: 1933. WSP 1387: 1931, 1933. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 614.75 ft (187.376 m) above mean sea level. Prior to Oct. 8, 1933, nonrecording gage, Oct. 9, 1933, to Dec. 31, 1935, water-stage recorder, Oct. 17 to Nov 29, 1939, nonrecording gage, all at same site and datum.

REMARKS.--Records good except those for winter period, which are fair. Flow supplemented by water imported from Maumee River basin for municipal supply for city of Bowling Green 16 mi (26 km) upstream. The importation of this water began Sept. 1, 1951.

AVERAGE DISCHARGE (adjusted for diversion).--45 years, 307 ft³/s (8.694 m³/s), 9.74 in/yr (247 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) Feb. 15, 1950, gage height, 14.51 ft (4.423 m); minimum daily (prior to diversion) 0.4 ft³/s (0.011 m³/s) Aug. 26, 1931 (subsequent to diversion) 1.8 ft³/s (0.051 m³/s) Sept. 22, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 17 ft (5 m), from information by local residents, discharge, 17,000 ft³/s (481 m³/s), from rating curve extended above 11,500 ft³/s (326 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99.1 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 24	0600	*4450	126	*9.12	2.780	Sept. 17	1700	3590	102	8.31	2.533

Minimum daily discharge, 6.6 ft³/s (0.19 m³/s) Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	17	14	9.6	9.3	1530	419	240	27	1170	13	23
2	14	25	13	9.6	9.3	923	371	200	26	1270	11	18
3	12	22	13	9.5	9.3	582	1290	245	26	419	10	16
4	10	22	12	9.5	9.3	980	871	500	25	195	11	18
5	9.2	21	12	9.5	9.3	2590	594	1950	32	511	12	21
6	12	18	11	9.5	9.3	1830	409	1300	37	335	38	17
7	21	17	11	9.5	9.3	1040	295	984	44	142	44	14
8	49	14	11	9.5	9.3	721	292	627	35	87	43	15
9	34	14	11	9.4	9.3	696	236	389	41	71	37	16
10	20	12	11	9.4	9.2	742	198	268	44	53	65	18
11	16	12	11	9.4	9.2	634	183	204	39	40	116	19
12	13	13	11	9.4	9.2	524	157	163	35	34	105	17
13	8.6	14	11	9.4	9.2	1130	137	136	33	47	164	65
14	7.0	16	11	9.4	9.2	1080	131	122	30	36	124	938
15	7.0	15	11	9.3	9.2	656	124	109	26	25	72	1140
16	6.6	14	11	9.3	9.2	438	108	96	26	28	49	1310
17	7.0	13	10	9.3	128	287	98	86	22	48	98	3330
18	7.5	14	10	9.3	195	860	92	91	30	45	87	2900
19	7.5	16	10	9.3	168	3100	91	91	43	48	50	1690
20	9.2	18	10	9.3	146	1980	90	76	48	120	34	2050
21	15	18	9.9	9.3	134	1500	91	68	34	80	27	1240
22	21	18	9.9	9.3	129	996	104	61	25	65	27	633
23	16	20	9.9	9.3	219	778	2150	54	22	162	40	385
24	16	17	9.9	9.3	460	1500	4060	52	20	88	74	265
25	16	19	9.9	9.3	1120	1240	3000	46	24	50	49	194
26	21	19	9.9	9.3	1030	999	2230	42	24	37	34	148
27	21	23	9.9	9.3	991	848	1470	41	26	27	29	119
28	19	20	9.9	9.3	1610	1580	700	40	23	20	23	99
29	15	18	9.8	9.3	---	2760	475	36	20	16	26	76
30	13	16	9.7	9.3	---	1460	350	31	38	15	28	65
31	15	---	9.6	9.3	---	736	---	28	---	15	23	---
TOTAL	476.6	515	333.3	290.7	6478.1	36720	20816	8356	925	5291	1555	16059
MEAN	15.4	17.2	10.8	9.38	231	1185	694	270	30.8	171	50.2	562
MAX	49	25	14	9.6	1610	3100	4060	1950	48	1270	164	3330
MIN	6.6	12	9.6	9.3	9.2	287	90	28	20	15	10	14
+	5.2	4.5	3.3	5.62	6.5	5.4	5.7	6.6	6.2	5.7	4.6	4.7
MEAN ø	10.2	12.7	7.5	3.76	224	1180	688	263	24.6	165	45.6	557
CFSM ø	.02	.03	.02	.01	.52	2.76	1.61	.61	.06	.39	.11	1.30
IN ø	.04	.03	.02	.01	.55	3.18	1.79	.71	.06	.44	.12	1.45

CAL YR 1976 TOTAL 110125.1 MEAN 301 MAX 7860 MIN 6.1 [+] 4.4 MEAN ø 297 CFSM ø .69 IN ø 9.43
WTR YR 1977 TOTAL 98615.7 MEAN 270 MAX 4060 MIN 6.6 [+] 5.3 MEAN ø 265 CFSM ø .62 IN ø 8.40

+ Diversion, in cubic feet per second, from Maumee River basin for municipal supply; furnished by city of Bowling Green.

ø Adjusted for diversion.

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH

LOCATION.--Lat 41°26'58", long 83°21'29", in E 1/2 sec. 28, T.6 N., R.13 E., Sandusky County, Hydrologic Unit 04100010, on right bank at old interurban line bridge abutment, just downstream from railroad bridge, and 800 ft (244 m) downstream from discharge station at Woodville.

DRAINAGE AREA.--428 mi² (1,109 km²) (at discharge station).

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to current year.
pH: June 1968 to current year.
WATER TEMPERATURES: June 1968 to current year.
DISSOLVED OXYGEN: June 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations. See records of discharge for station at Woodville (station 04195500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,350 micromhos Feb. 4, 1971; minimum, 234 micromhos Feb. 12, 1976.
pH: Maximum, 12.0 units Aug. 5, 9, 1971, Aug. 14, 15, 1972; minimum, 6.4 units Nov. 29, 30, 1973.
WATER TEMPERATURES: Maximum, 36.5°C July 8, 1974; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during 1971-72, 1974-77; minimum, 0.1 mg/L Aug. 14-16, 1973.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,920 micromhos Feb. 10; minimum, 267 micromhos Sept. 13.
pH: Maximum recorded, 9.5 units June 20, Sept. 11; minimum recorded, 6.8 units Feb. 3.
WATER TEMPERATURES: Maximum, 35.0°C July 15; minimum, 0.0°C on many days during November to February.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during October to December, April to August; minimum, 2.5 mg/L Feb. 6, May 25, June 28. 29.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 09...	1645	665	590	7.8	5.5	11.2	89	3.3	250	130	73	17
JUN 14...	1630	26	860	9.2	25.5	18.5	220	3.1	290	130	68	29

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 09...	16	3.1	146	0	120	3.7	72	42	.2	6.6	302	4.0
JUN 14...	56	6.8	119	34	154	.2	140	89	.5	.3	482	.98

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 09...	.14	.42	.21	2	10	11	30	9	30	.0	30	9.5
JUN 14...	.02	.07	.55	3	10	6	50	3	10	.0	30	5.6

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1040	980	1130	1050	1340	1280	1400	1380	1440	1420	438	411
2	1040	987	1210	1120	1410	1330	1460	1370	1460	1440	495	432
3	1030	915	1180	1100	1490	1420	1650	1390	1450	1420	582	495
4	943	858	1110	1020	1440	1370	1480	1430	1560	1400	558	469
5	969	855	1230	997	1370	1350	1450	1430	1400	1380	483	423
6	936	735	1280	1160	1470	1350	1650	1430	1390	1370	507	432
7	1010	942	1280	1190	1450	1330	1560	1410	1400	1390	561	507
8	1040	1010	1230	1170	1380	1340	1410	1360	1410	1400	597	558
9	1080	1020	1210	1140	1390	1300	1400	1370	1630	1390	606	588
10	1130	1090	1150	1110	1340	1280	1430	1400	1920	1390	603	591
11	1180	1040	1100	1080	1360	1330	1410	1380	1740	1480	642	600
12	1150	978	1100	1070	1510	1370	1360	1360	1600	1450	690	639
13	1100	1010	1100	1070	1580	1520	1370	1390	1580	1310	708	660
14	1110	986	1140	1090	1580	1470	1370	1350	1300	1250	687	657
15	1090	1010	1150	1140	1470	1400	1410	1370	1630	1310	735	690
16	1140	1010	1170	1130	1460	1420	1430	1410	1540	1490	768	723
17	1160	1040	1160	1120	1480	1430	---	---	1490	1430	780	762
18	1130	986	1180	1130	1470	1370	---	---	1430	1370	828	579
19	1140	1040	1200	1170	1480	1370	---	---	1430	1380	561	528
20	1250	1160	1210	1190	1370	1230	---	---	1380	1330	639	558
21	1390	1240	1180	1120	1310	1260	---	---	1340	1300	660	639
22	1320	1190	1110	1100	1370	1310	---	---	1320	1090	702	663
23	1180	1080	1140	1100	1380	1350	---	---	1100	690	729	690
24	1290	1110	1190	1140	1390	1360	---	---	765	663	696	609
25	1340	1280	1160	1130	1400	1360	---	---	723	522	642	609
26	1350	1150	1150	1120	1520	1360	---	---	687	498	663	648
27	1180	1110	1140	1090	1510	1440	1370	1350	558	477	675	660
28	1130	1020	1090	1080	1450	1400	1350	1310	507	414	666	552
29	1050	997	1180	1050	1430	1390	1360	1320	---	---	558	531
30	1010	934	1270	1180	1390	1370	1370	1350	---	---	636	561
31	1100	981	---	---	1390	1370	1410	1370	---	---	690	639
MONTH	1390	735	1280	997	1580	1230	1650	1310	1920	414	828	411

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	750	696	744	729	865	786	774	608	780	630	852	801
2	759	717	753	675	933	858	594	447	930	681	840	807
3	744	570	720	654	1020	870	657	597	900	720	888	810
4	842	568	666	474	924	860	705	600	960	777	1030	837
5	708	645	468	450	873	693	714	294	894	780	1010	894
6	729	705	567	471	840	810	636	591	792	648	996	930
7	744	732	645	573	864	810	702	642	840	792	1060	864
8	744	738	702	648	870	813	720	702	900	555	1040	822
9	753	741	738	702	834	573	750	693	780	687	972	834
10	762	750	750	741	900	810	780	630	813	672	1050	846
11	765	753	780	750	912	870	825	660	813	504	1080	894
12	774	750	798	780	912	869	750	633	684	630	1080	978
13	777	756	810	786	870	816	813	657	693	660	1080	267
14	789	753	825	774	852	816	810	642	717	642	477	420
15	807	777	813	780	897	843	783	660	690	654	495	429
16	813	783	819	792	915	876	738	660	762	675	525	459
17	804	783	834	750	885	855	804	720	735	642	462	378
18	813	768	834	759	876	834	780	678	681	603	468	408
19	837	780	843	780	918	837	690	627	786	678	513	417
20	852	762	801	741	942	834	747	651	900	684	501	429
21	858	774	840	762	912	822	720	513	930	663	558	468
22	855	678	861	807	963	840	780	672	930	660	627	564
23	687	561	858	810	927	876	720	596	834	672	675	627
24	579	561	876	732	933	891	627	596	867	807	702	678
25	588	570	852	801	927	873	690	636	888	744	735	705
26	621	568	870	816	909	855	---	---	843	666	765	729
27	654	621	882	699	855	816	---	---	720	660	786	768
28	702	657	825	726	870	825	834	552	711	651	873	786
29	726	702	786	741	987	858	660	564	720	669	894	798
30	732	714	816	741	900	354	618	540	867	699	825	807
31	---	---	840	750	---	---	714	612	852	732	---	---
MONTH	858	561	882	450	1020	354	834	294	960	504	1080	267
YEAR	1920	267										

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.4	8.0	8.4	8.2	8.2	8.0	7.8	7.6	7.3	7.3	7.9	7.6
2	8.6	8.2	8.5	8.2	8.1	7.8	7.7	7.6	7.3	7.0	7.9	7.6
3	8.6	8.2	8.4	8.1	8.1	7.8	7.6	7.5	7.3	6.8	7.7	7.6
4	8.7	8.2	8.4	8.2	7.9	7.7	7.6	7.5	7.4	7.3	7.7	7.6
5	8.8	8.2	8.5	8.1	8.0	7.7	7.6	7.6	7.4	7.4	7.8	7.7
6	8.6	8.1	8.5	8.2	8.0	7.7	7.6	7.5	7.5	7.4	7.8	7.7
7	8.5	8.0	8.5	8.3	8.1	7.6	7.6	7.5	7.4	7.4	7.9	7.8
8	8.3	8.0	8.6	8.3	8.2	7.7	7.6	7.5	7.4	7.4	7.9	7.8
9	8.3	8.0	8.7	8.3	8.3	7.8	7.6	7.5	7.4	7.3	7.9	7.8
10	8.4	8.2	8.7	8.2	8.2	7.8	7.6	7.6	7.4	7.3	7.9	7.9
11	8.5	8.1	8.7	8.2	8.4	7.8	7.7	7.6	7.4	7.3	7.9	7.8
12	8.5	8.2	8.7	8.3	8.3	7.9	7.6	7.6	7.5	7.4	8.1	8.0
13	8.4	8.2	8.7	8.3	8.5	7.9	7.1	7.0	7.5	7.4	8.1	8.0
14	8.7	8.0	8.7	8.2	8.6	7.9	7.3	7.2	7.5	7.3	8.1	7.9
15	8.8	8.0	8.6	8.3	8.6	7.9	7.3	7.3	7.5	7.4	8.1	8.0
16	8.9	8.1	8.6	8.2	8.6	7.9	7.4	7.4	7.4	7.4	8.3	8.1
17	8.8	8.1	8.6	8.2	8.6	7.9	---	---	7.5	7.4	8.3	8.2
18	8.9	8.1	8.6	8.1	8.7	8.0	---	---	7.5	7.4	8.3	7.9
19	8.7	8.1	8.6	8.0	8.7	8.1	---	---	7.4	7.4	8.0	7.8
20	8.5	8.0	8.5	8.0	8.5	8.2	---	---	7.4	7.4	8.0	7.9
21	8.6	8.0	8.5	8.0	8.5	8.1	---	---	7.5	7.4	8.0	7.9
22	---	---	8.6	8.0	8.5	8.0	---	---	7.5	7.4	8.2	7.8
23	---	---	8.6	8.1	8.2	8.0	---	---	7.5	7.3	---	---
24	---	---	8.6	8.1	8.2	7.9	---	---	7.5	7.4	---	---
25	---	---	8.5	8.1	8.3	7.8	---	---	7.6	7.5	---	---
26	8.2	8.1	8.3	7.9	8.0	7.8	---	---	7.8	7.6	---	---
27	8.3	8.0	8.5	7.7	7.9	7.7	---	---	7.7	7.6	---	---
28	8.4	8.1	8.4	7.8	7.8	7.6	---	---	7.7	7.6	---	---
29	8.5	8.2	8.5	8.0	7.7	7.6	---	---	---	---	---	---
30	8.4	8.2	8.7	8.0	7.7	7.6	---	---	---	---	---	---
31	8.4	8.1	---	---	7.8	7.6	7.3	7.3	---	---	---	---
MONTH	8.9	8.0	8.7	7.7	8.7	7.6	7.8	7.0	7.8	6.8	8.3	7.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---			---	---	8.5	7.5	9.0	8.7	9.1	8.7
2	---	---			---	---	7.8	7.5	8.9	8.4	9.0	8.7
3	---	---			9.0	8.7	7.9	7.6	8.5	7.8	9.1	8.7
4	---	---			8.8	8.5	7.9	7.6	8.6	7.9	9.1	8.7
5	8.2	8.1			8.6	7.9	7.9	7.0	8.7	7.8	9.1	8.8
6	8.3	8.2			9.3	7.5	7.5	7.0	8.7	8.0	9.0	8.6
7	8.3	8.2			9.4	8.6	7.6	7.2	8.9	7.8	9.2	8.8
8	8.3	8.2			9.3	8.5	8.1	7.5	8.7	7.7	9.4	9.0
9	8.3	8.2			9.3	8.8	8.7	7.9	9.0	7.8	9.2	9.1
10	8.3	8.3			9.2	8.6	8.8	8.4	8.6	7.7	9.4	9.0
11	8.6	8.4			9.1	8.6	9.0	8.3	8.5	7.6	9.5	9.0
12	8.8	8.4			9.1	8.4	8.9	8.2	8.1	7.7	9.4	9.0
13	8.9	8.4			9.4	8.5	9.0	8.1	8.0	7.8	9.0	7.9
14	9.0	8.5			9.3	8.7	9.0	8.4	8.2	7.9	7.9	7.8
15	9.0	8.6			9.2	8.9	8.8	8.3	8.5	7.9	8.1	7.9
16	9.0	8.6			9.2	8.9	8.8	8.1	8.6	8.2	8.1	7.8
17	9.0	8.6			9.0	8.7	9.0	8.2	8.6	8.1	7.7	7.6
18	9.0	8.5			9.1	8.2	9.1	8.1	8.4	7.9	7.7	7.6
19	9.1	8.4			9.2	8.5	9.0	8.4	9.1	8.1	7.8	7.6
20	9.2	8.8			9.5	8.8	9.0	8.2	9.3	8.7	8.0	7.7
21	9.2	8.7			9.4	9.0	8.8	8.0	9.2	8.5	7.8	7.4
22	---	---			9.3	8.7	8.7	7.8	9.2	8.3	7.9	7.7
23	---	---			9.2	8.8	8.5	7.9	9.2	8.7	7.9	7.9
24	---	---			9.2	8.7	8.2	7.9	9.0	8.6	7.9	7.9
25	---	---			9.3	8.6	8.6	7.8	9.3	8.8	8.0	7.9
26	---	---			9.4	9.0	---	---	9.1	8.7	8.1	7.9
27	---	---			9.3	9.0	---	---	8.9	8.4	8.3	8.0
28	---	---			9.1	8.6	9.1	8.8	9.0	8.5	8.3	8.2
29	---	---			9.3	8.1	9.2	8.8	8.9	8.5	8.4	8.2
30	---	---			9.0	8.4	9.1	8.8	9.1	8.7	8.5	8.2
31	---	---			---	---	9.0	8.7	9.2	8.8	---	---
MONTH	9.2	8.1			9.5	7.5	9.2	7.0	9.3	7.6	9.5	7.4
YEAR	9.5	6.8										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	13.0	8.0	2.0	0.5	0.0	0.5	0.0	0.0	0.0	10.0	1.0
2	19.0	15.0	9.0	4.5	0.5	0.0	0.5	0.0	0.5	0.0	11.0	1.0
3	20.5	16.0	9.0	5.5	0.5	0.0	0.5	0.5	0.5	0.5	1.0	1.0
4	22.5	15.0	5.5	4.0	0.5	0.5	0.5	0.5	0.5	0.5	1.5	1.0
5	23.0	16.5	6.5	3.0	0.5	0.5	0.5	0.5	0.5	0.0	1.0	1.0
6	20.5	14.5	6.0	3.5	1.0	0.5	0.5	0.5	0.5	0.0	2.0	1.0
7	14.5	13.0	5.5	3.5	1.0	0.5	0.5	0.0	0.5	0.0	2.5	1.0
8	13.5	11.5	3.0	1.0	1.0	0.5	0.5	0.0	0.5	0.0	4.0	1.0
9	13.0	12.0	5.0	1.0	1.0	0.5	0.5	0.0	0.5	0.5	5.5	3.0
10	14.0	11.5	4.5	2.5	1.0	0.5	0.0	0.0	1.0	0.5	6.0	4.5
11	16.0	12.5	4.0	2.5	1.5	0.5	0.0	0.0	1.0	0.5	7.5	5.0
12	17.5	13.0	3.0	1.0	1.5	1.0	0.0	0.0	1.0	0.5	9.5	7.0
13	18.5	14.0	2.5	0.5	1.5	1.0	0.0	0.0	0.5	0.5	9.0	7.5
14	15.5	11.0	2.5	0.5	1.5	1.0	0.0	0.0	1.0	0.5	8.0	7.0
15	16.0	12.0	2.0	0.5	1.5	1.0	0.0	0.0	0.5	0.5	10.0	6.5
16	13.5	9.0	2.0	0.5	1.5	1.0	0.0	0.0	1.0	0.5	11.0	8.5
17	11.5	9.0	2.5	0.5	1.5	1.0	---	---	1.0	0.5	9.5	6.5
18	10.5	6.0	3.5	1.0	2.0	1.0	---	---	1.0	0.5	5.5	4.0
19	10.0	8.0	4.0	2.0	2.0	1.0	---	---	1.0	0.5	5.0	3.5
20	10.0	9.0	3.5	1.0	1.5	1.0	---	---	1.0	0.5	5.0	4.5
21	9.5	7.0	3.0	1.0	1.0	0.5	---	---	1.0	0.5	6.0	4.0
22	8.0	4.5	1.0	0.0	1.0	0.5	---	---	1.5	0.5	5.5	4.0
23	7.0	3.0	1.0	0.0	1.0	0.5	---	---	1.5	1.0	5.0	3.0
24	10.0	6.5	1.0	0.0	1.0	0.5	---	---	1.5	1.0	4.0	3.0
25	11.0	9.0	1.5	0.5	1.0	0.5	---	---	1.0	1.0	6.0	3.5
26	9.0	6.5	6.5	1.5	0.5	0.5	---	---	1.0	1.0	7.0	4.5
27	7.0	4.0	7.5	5.0	0.5	0.5	0.0	0.0	1.0	1.0	8.5	6.0
28	6.0	1.5	4.5	0.5	0.5	0.5	0.0	0.0	2.0	1.0	9.5	8.0
29	7.5	2.0	1.0	0.0	0.5	0.0	0.0	0.0	---	---	12.5	9.0
30	6.0	4.5	1.0	0.0	0.5	0.0	0.0	0.0	---	---	14.5	12.0
31	7.0	4.5	---	---	0.0	0.0	0.0	0.0	---	---	13.5	11.0
MONTH	23.0	1.5	9.0	0.0	2.0	0.0	0.5	0.0	2.0	0.0	14.5	1.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.0	9.0	16.5	12.0	22.0	17.0	20.0	18.5	28.5	22.0	30.0	24.0
2	13.5	10.0	16.0	13.5	17.5	15.5	22.0	18.5	28.0	20.0	29.5	24.5
3	13.0	11.0	13.5	12.5	23.0	13.0	23.0	19.5	28.5	21.0	26.5	23.0
4	11.0	10.0	12.5	11.5	24.0	15.5	24.5	20.5	30.0	22.0	26.0	20.0
5	9.0	8.0	16.0	12.0	21.5	18.0	25.0	20.0	30.0	23.0	27.0	22.0
6	7.5	6.5	17.0	16.5	19.0	16.0	27.0	22.5	25.5	24.0	24.5	21.5
7	8.0	5.5	16.5	15.0	19.0	13.0	29.0	24.5	26.0	23.0	26.0	19.0
8	8.5	5.0	16.0	14.0	18.5	14.0	29.0	24.0	26.5	22.0	25.5	19.5
9	10.0	6.0	14.0	12.0	20.0	12.0	29.5	24.5	26.0	22.0	26.5	20.0
10	14.5	8.5	15.0	10.5	21.5	14.0	28.0	22.5	25.0	22.5	22.5	19.0
11	18.0	12.5	17.0	12.0	18.5	16.0	27.0	21.5	26.0	22.0	23.0	17.0
12	20.5	15.5	17.0	14.0	16.5	15.0	28.5	23.0	25.0	20.5	20.0	17.0
13	21.0	16.5	20.5	14.5	21.0	14.0	30.5	23.5	23.5	21.0	19.5	17.5
14	19.5	16.5	21.0	17.5	24.0	17.0	32.5	23.0	25.0	21.5	18.0	16.5
15	19.5	15.0	21.0	16.0	26.5	18.5	35.0	26.0	26.0	21.0	17.0	16.0
16	19.0	15.0	22.5	16.0	28.0	20.0	31.0	26.0	25.5	21.5	17.5	16.0
17	19.5	15.5	24.5	18.5	27.5	22.5	30.5	24.5	24.5	21.0	19.0	17.5
18	20.5	16.0	25.5	20.5	27.0	23.0	32.0	25.0	22.0	19.0	20.0	19.0
19	21.5	17.5	27.0	20.5	26.5	21.0	32.0	25.0	20.5	17.0	20.0	19.0
20	23.0	18.5	28.5	20.0	25.5	20.5	31.5	26.5	22.5	17.5	19.0	17.5
21	22.5	19.5	28.5	21.5	26.0	19.5	29.5	25.0	20.5	18.5	17.0	16.5
22	20.5	14.0	26.5	21.5	26.0	19.5	28.5	22.5	23.5	18.0	17.5	15.5
23	13.0	10.5	24.5	20.5	26.0	19.5	26.5	22.5	23.5	19.0	18.5	16.5
24	11.0	10.0	26.0	20.0	26.5	20.5	26.5	21.5	22.0	19.5	19.0	17.5
25	11.0	10.0	27.5	20.5	27.5	22.5	27.5	23.5	22.0	17.5	20.5	17.5
26	11.5	9.0	26.5	20.0	29.5	23.0	---	---	25.0	17.0	19.5	18.5
27	13.5	11.0	27.0	19.0	28.0	22.5	---	---	28.5	22.0	18.5	17.0
28	13.5	11.0	28.0	19.0	28.5	24.0	28.5	24.0	30.0	23.5	17.5	15.5
29	12.0	9.0	24.5	20.0	26.5	21.5	27.0	21.5	26.0	23.0	16.5	14.0
30	14.5	10.0	24.0	17.5	24.0	19.5	28.5	21.0	28.0	21.0	18.0	14.5
31	---	---	25.5	18.5	---	---	29.0	23.0	29.5	21.5	---	---
MONTH	23.0	5.0	28.5	10.5	29.5	12.0	35.0	18.5	30.0	17.0	30.0	14.0
YEAR	35.0	0.0										

04195600 PORTAGE RIVER AT RAILROAD BRIDGE, AT WOODVILLE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.0	11.2	12.4	10.5	13.8	11.9	8.1	6.7	5.1	4.4	---	---
2	15.0	11.7	12.2	9.8	13.0	10.4	8.2	7.2	4.4	3.6	---	---
3	15.0	11.9	11.9	9.4	13.6	10.3	7.3	5.3	3.7	3.1	---	---
4	13.4	9.2	11.8	9.8	11.2	9.5	7.2	5.0	3.2	2.8	---	---
5	11.6	7.6	13.0	9.8	11.9	8.3	7.1	5.7	3.0	2.7	---	---
6	8.2	6.5	12.9	10.5	12.2	7.9	7.5	4.9	3.0	2.5	---	---
7	10.0	6.5	13.1	10.7	12.9	7.2	6.1	4.6	---	---	---	---
8	9.9	7.4	13.7	10.8	13.9	9.2	5.7	4.1	---	---	---	---
9	9.9	7.5	14.4	11.6	14.3	10.4	5.2	3.6	---	---	11.0	10.7
10	10.9	8.2	13.4	10.7	13.4	10.1	4.5	3.1	---	---	10.7	10.1
11	11.6	7.9	14.0	10.4	14.7	10.1	5.2	3.7	---	---	10.5	9.9
12	11.5	7.9	14.3	11.1	13.7	10.9	5.6	3.8	---	---	10.1	9.8
13	9.9	7.2	14.5	11.6	15.0	10.7	5.3	4.6	---	---	9.8	9.2
14	11.2	6.8	14.8	11.7	15.0	11.5	6.2	3.8	---	---	10.1	9.8
15	11.4	7.2	14.3	12.1	15.0	10.9	4.3	3.4	---	---	10.5	9.9
16	12.2	7.1	14.3	12.1	15.0	11.5	3.3	2.7	---	---	10.3	9.8
17	12.1	7.7	14.4	11.7	15.0	10.9	---	---	---	---	10.5	9.6
18	11.7	8.0	14.5	10.8	14.9	11.2	---	---	---	---	10.7	9.9
19	10.8	7.8	13.8	10.4	15.0	12.0	---	---	---	---	10.9	10.5
20	10.6	7.7	14.0	10.4	14.2	11.6	---	---	---	---	10.8	10.4
21	11.3	8.5	14.0	10.5	14.5	12.0	---	---	---	---	11.1	10.9
22	12.0	9.8	14.3	10.7	15.0	11.9	---	---	---	---	11.5	10.7
23	11.9	10.0	14.8	11.7	12.9	11.5	---	---	7.2	4.7	11.9	11.2
24	10.7	9.0	15.0	12.0	13.4	10.8	---	---	7.4	6.3	11.9	11.5
25	10.4	8.3	14.7	11.7	13.8	10.2	---	---	9.0	7.5	11.9	11.6
26	11.5	8.6	12.7	9.3	11.7	9.4	---	---	---	---	11.7	11.3
27	12.2	9.6	12.3	7.6	10.5	8.3	4.3	3.2	---	---	11.4	10.8
28	12.8	10.8	12.8	8.3	9.8	7.2	4.6	3.5	---	---	10.7	9.7
29	13.3	11.2	15.0	10.0	8.9	6.5	5.9	4.8	---	---	10.2	9.8
30	12.2	10.4	15.0	12.7	8.7	5.9	5.5	5.0	---	---	9.9	9.3
31	11.9	9.1	---	---	9.2	6.4	5.5	5.0	---	---	10.4	9.5
MONTH	15.0	6.5	15.0	7.6	15.0	5.9	8.2	2.7	9.0	2.5	11.9	9.2

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.6	10.0	13.6	9.9	12.6	4.0	---	---	12.8	5.5	14.5	3.9
2	10.5	9.5	11.1	8.7	14.4	4.8	---	---	10.8	5.6	13.5	3.5
3	9.8	8.7	9.4	8.5	14.5	5.1	---	---	11.0	4.6	13.4	3.6
4	9.9	9.4	9.8	8.8	15.0	7.4	---	---	12.0	5.2	13.0	5.4
5	11.4	9.7	8.8	8.1	15.0	4.7	---	---	11.4	4.9	15.0	4.8
6	12.4	10.7	8.3	7.7	15.0	4.7	---	---	10.7	4.9	12.6	4.8
7	13.0	11.6	9.4	8.3	15.0	7.0	10.7	7.8	14.5	4.8	15.0	7.0
8	13.7	11.7	10.1	9.0	15.0	6.8	15.0	7.1	13.2	5.0	15.0	7.9
9	14.1	12.1	11.7	9.2	15.0	7.3	15.0	7.4	15.0	5.4	14.7	6.7
10	14.5	11.8	12.6	9.7	15.0	7.0	15.0	8.1	10.0	5.4	14.6	6.4
11	15.0	10.6	13.7	9.3	15.0	6.1	15.0	8.1	12.6	6.0	15.0	7.0
12	15.0	9.9	13.9	9.1	15.0	6.0	15.0	8.5	8.7	6.0	12.9	7.4
13	15.0	9.6	15.0	9.0	15.0	6.8	15.0	7.7	7.7	5.8	10.6	7.0
14	15.0	9.6	13.9	8.1	15.0	7.1	15.0	6.5	9.3	6.1	7.7	7.1
15	15.0	9.1	14.4	8.4	15.0	6.6	15.0	4.7	11.5	6.1	7.8	7.1
16	15.0	9.4	15.0	8.6	15.0	5.3	15.0	4.2	12.0	6.3	8.0	7.5
17	15.0	9.0	15.0	8.0	15.0	4.3	15.0	3.8	11.6	6.1	7.5	6.9
18	15.0	8.2	14.8	5.9	15.0	3.0	15.0	5.1	9.7	6.0	7.0	6.8
19	15.0	7.7	15.0	4.6	15.0	4.2	15.0	3.2	14.1	6.9	7.6	7.0
20	15.0	7.2	15.0	3.7	15.0	4.4	15.0	7.2	15.0	7.8	7.5	6.9
21	15.0	6.7	15.0	3.1	15.0	4.9	15.0	6.3	15.0	8.2	8.1	7.5
22	15.0	6.0	15.0	2.7	15.0	4.7	15.0	5.6	15.0	8.7	9.0	8.2
23	9.1	7.8	15.0	2.6	15.0	6.4	13.9	8.2	15.0	8.1	8.5	8.1
24	9.2	8.6	15.0	2.8	15.0	6.4	13.7	6.9	13.5	7.6	8.4	7.9
25	9.6	8.9	15.0	2.5	15.0	4.7	15.0	6.3	15.0	7.9	9.0	7.8
26	10.0	9.2	15.0	2.6	15.0	4.6	---	---	15.0	7.0	9.2	7.7
27	10.2	9.4	15.0	4.4	15.0	4.2	---	---	15.0	5.4	9.9	7.9
28	10.2	9.1	15.0	4.6	13.9	2.5	15.0	14.7	15.0	4.7	10.8	8.2
29	12.8	9.8	15.0	4.1	15.0	2.5	15.0	9.6	12.2	4.7	11.2	8.3
30	13.4	10.5	15.0	5.5	---	---	15.0	7.9	15.0	6.0	12.7	8.4
31	---	---	14.1	5.6	---	---	12.6	5.4	15.0	5.4	---	---
MONTH	15.0	6.0	15.0	2.5	15.0	2.5	15.0	3.2	15.0	4.6	15.0	3.5
YEAR	15.0	2.5										

04196000 SANDUSKY RIVER NEAR BUCYRUS, OH

LOCATION.--Lat 40°48'13", long 83°00'21", in NE 1/4 sec. 10, T. 3 S., R. 16 E., Crawford County, Hydrclogic Unit 04100011, on right bank at downstream side of bridge on township road, 1 mile (2 km) upstream from unnamed left bank tributary, 1.5 mi (2.4 km) west of Bucyrus, and 12 mi (19 km) downstream from Loss Creek.

DRAINAGE AREA.--88.8 mi² (230 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1925 to November 1935, July 1938 to December 1951, December 1963 to current year.

REVISED RECORDS.--WSP 744: 1925-32. WSP 874: 1938. WSP 1307: 1926(M), 1928(M), 1931, 1932(M), 1934-35(M), 1939, 1940(M), 1946(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 955.04 ft (291.096 m) above mean sea level. Prior to May 11, 1940, nonrecording gage, and May 12, 1940, to December 31, 1951, water-stage recorder, at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair. Low flow slightly affected by operation of reservoirs 5.3 mi (8.5 km) to 6.0 mi (9.7 km) upstream from station, for municipal supply of Bucyrus.

AVERAGE DISCHARGE.--36 years (1925-35, 1938-51, 1964-77), 84.2 ft³/s (2.385 m³/s), 12.88 in/yr (327 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 5,800 ft³/s (164 m³/s) Dec. 14, 1927, gage height, 9.15 ft (2.789 m) from rating curve extended above 2,500 ft³/s (70.8 m³/s); minimum daily, 0.6 ft³/s (0.017 m³/s) Sept. 28-30, 1941, Sept. 25-26, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 23, 1913 reached a stage of 14.5 ft (4.42 m), from floodmarks. Flood of Jan. 22, 1959 reached a stage of 11.9 ft (3.63 m), from floodmarks, discharge, 13,500 ft³/s (382 m³/s), on basis of contracted-opening measurement of peak flow at site 2.8 mi (4.5 km) upstream with drainage area of 85.4 mi² (221 km²), adjusted to gage site by 0.8 power of drainage-area ratio.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 24	1600	1810	51.3	6.92	2.109	Apr. 3	1300	*2140	60.6	*7.50	2.2
Mar. 19	0200	1450	41.1	6.16	1.878						

Minimum daily discharge, 1.5 ft³/s (0.043 m³/s) Jan. 4-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	20	8.6	1.7	7.3	110	68	47	5.8	185	13	7.9
2	4.4	22	6.5	1.6	8.0	78	522	47	5.6	60	9.8	24
3	3.0	16	5.3	1.6	8.4	72	1890	49	4.9	17	6.5	48
4	3.6	14	4.9	1.5	8.0	161	446	240	4.2	58	4.4	33
5	3.6	13	4.7	1.5	7.7	329	337	386	4.7	272	88	16
6	7.3	10	10	1.5	7.3	148	217	219	6.7	82	82	12
7	4.7	8.0	16	1.5	7.7	104	161	115	5.3	37	39	9.5
8	5.0	7.3	13	1.5	8.0	81	118	77	8.2	69	30	7.0
9	7.7	7.3	11	1.5	8.0	73	90	57	11	47	20	6.5
10	4.7	7.3	11	1.5	10	72	77	44	5.3	21	13	11
11	9.6	6.9	9.6	1.5	15	62	62	38	4.9	15	25	11
12	6.6	6.6	8.7	1.5	23	76	48	33	6.3	13	43	8.9
13	5.3	6.3	8.3	1.5	35	280	39	29	6.3	12	39	37
14	4.4	4.7	7.5	1.5	101	182	34	26	6.0	11	19	191
15	3.9	5.3	6.5	1.5	92	117	28	23	5.6	6.0	15	89
16	3.0	9.2	6.0	1.5	73	85	24	21	4.7	7.0	11	205
17	2.8	9.2	5.6	1.5	62	63	21	20	21	9.5	8.5	381
18	5.0	14	6.6	1.5	53	620	20	19	11	23	6.5	312
19	5.6	10	6.9	1.5	44	790	19	17	9.8	8.9	5.6	641
20	16	8.8	13	2.6	37	258	23	17	9.2	4.9	4.4	238
21	16	8.8	12	5.9	33	190	39	15	7.9	15	14	107
22	13	9.2	8.0	9.2	42	308	47	19	7.3	465	51	66
23	6.9	7.7	4.5	8.0	360	364	164	33	7.0	172	48	46
24	18	8.0	3.9	8.8	1360	183	127	26	6.7	57	21	35
25	25	8.4	3.4	8.8	1180	112	80	7.6	5.3	30	13	27
26	27	14	2.9	9.2	350	83	102	5.6	4.2	19	8.9	22
27	20	13	2.7	8.4	269	68	97	4.7	5.3	15	6.7	18
28	13	17	2.4	8.0	198	142	72	5.6	4.4	12	5.1	15
29	12	16	2.2	8.0	---	413	71	6.3	7.9	12	5.3	13
30	13	13	2.0	8.0	---	200	60	5.8	32	11	4.7	11
31	16	---	1.8	8.0	---	104	---	6.7	---	19	7.0	---
TOTAL	291.7	321.0	215.5	121.8	4407.4	5928	5103	1659.3	234.5	1785.3	667.4	2648.8
MEAN	9.41	10.7	6.95	3.93	157	191	170	53.5	7.82	57.6	21.5	88.3
MAX	27	22	16	9.2	1360	790	1890	386	32	465	88	641
MIN	2.8	4.7	1.8	1.5	7.3	62	19	4.7	4.2	4.9	4.4	6.5
CFSM	.11	.12	.08	.04	1.77	2.15	1.91	.60	.09	.65	.24	.99
IN.	.12	.13	.09	.05	1.85	2.48	2.14	.70	.10	.75	.28	1.11

CAL YR 1976 TOTAL 28779.3 MEAN 78.6 MAX 2340 MIN 1.8 CFSM .89 IN 12.06
WTR YR 1977 TOTAL 23383.7 MEAN 64.1 MAX 1890 MIN 1.5 CFSM .72 IN 9.80

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04196000 SANDUSKY RIVER NEAR BUCYRUS, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 07...	1100	107	615	8.1	3.5	11.6	87	3.0	260	120	72	19
JUN 13...	1100	6.9	750	7.5	24.0	4.3	50	5.3	280	76	79	20

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 07...	22	3.3	167	0	137	2.1	79	45	.2	7.6	331	4.9
JUN 13...	48	8.0	248	0	203	13	110	69	.4	4.8	462	.53

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 07...	.05	.47	.19	1	30	10	30	[illegible]	60	.0	30	6.1
JUN 13...	.97	7.8	2.7	3	<10	4	30	6	50	.2	20	6.4

04196200 BROKEN SWORD CREEK AT NEVADA, OH

LOCATION.--Lat 40°49'34", long 83°09'11", in sec. 32, T.25 N., R. 15 E., Wyandot County, Hydrologic Unit 04100011, on right bank at bridge on State Highway 182, 1.2 mi (1.93 km) northwest of Nevada, 5.0 mi (8.0 km) upstream from mouth.

DRAINAGE AREA.--83.8 mi² (217 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1959, 1962-65, 1967, 1969-71. February 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 880 ft (268 m) from topographic map.

REMARKS.--Records fair except those for winter periods, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge for period February to September 1976, 2,690 ft³/s (76.2 m³/s) Feb. 17, 1976, gage height, 11.46 ft (3.493 m); minimum observed discharge, 0.01 ft³/s (0.28 m³/s) Oct. 4, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1100 ft³/s (31.2 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 24	1230	*1280	36.2	*10.10	3.078	Apr. 3	1630	1200	34.0	9.98	3.042

Minimum daily discharge, 1.1 ft³/s (0.031 m³/s) Feb. 4-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	3.6	1.7	3.1	1.3	82	52	39	5.0	724	9.4	4.7
2	2.2	4.5	1.6	3.0	1.2	64	267	37	4.6	285	8.5	4.6
3	2.2	4.9	1.6	3.0	1.2	48	828	34	4.8	72	7.8	8.1
4	2.0	4.5	1.6	2.9	1.1	105	654	128	4.5	35	7.2	17
5	1.7	4.4	1.6	2.9	1.1	243	256	364	4.7	154	15	9.3
6	2.0	4.3	1.6	2.8	1.1	111	170	245	5.3	200	16	6.9
7	2.2	3.9	1.7	2.7	1.1	84	148	112	5.1	55	20	4.9
8	2.3	3.5	1.7	2.6	1.1	84	132	72	5.3	109	20	4.1
9	2.2	3.2	1.8	2.6	1.1	79	93	55	7.0	124	14	4.7
10	2.7	3.2	1.8	2.5	1.1	91	71	40	6.8	39	11	4.4
11	3.0	3.2	1.9	2.4	1.1	81	58	31	6.0	20	12	4.6
12	2.8	3.2	2.0	2.4	1.1	74	45	24	5.6	14	147	4.6
13	3.0	3.2	2.2	2.3	2.2	204	36	20	5.0	13	91	5.5
14	3.4	3.3	2.4	2.2	70	169	31	17	4.7	10	32	80
15	3.3	3.3	2.5	2.1	39	101	27	15	4.5	9.6	19	128
16	3.2	3.3	2.6	2.1	93	72	22	14	4.1	9.0	14	194
17	3.0	3.3	2.7	2.0	96	53	19	12	6.0	9.8	11	510
18	2.8	3.3	2.8	1.9	64	332	18	12	5.8	8.5	9.6	546
19	2.8	3.3	3.0	1.9	52	596	17	12	5.0	7.9	8.7	633
20	3.1	3.2	3.1	1.8	44	265	16	10	4.8	7.5	7.7	531
21	3.7	3.0	3.2	1.8	39	171	16	9.4	4.4	8.3	7.1	178
22	3.9	2.7	3.2	1.7	48	279	27	9.0	3.9	120	13	80
23	4.3	2.5	3.2	1.7	584	424	144	8.7	4.1	362	23	51
24	4.5	2.4	3.2	1.7	1200	208	255	11	3.7	94	15	39
25	5.2	2.2	3.2	1.6	925	110	128	9.3	3.6	32	9.8	34
26	6.3	2.0	3.1	1.5	377	78	93	7.5	3.7	21	7.8	27
27	5.9	1.9	3.1	1.5	265	63	92	6.2	5.0	16	7.0	22
28	4.9	1.8	3.1	1.4	194	150	68	5.7	4.8	13	6.2	18
29	3.6	1.7	3.1	1.4	---	371	68	5.9	4.3	11	5.5	14
30	3.4	1.7	3.1	1.3	---	193	49	6.1	23	11	4.9	11
31	3.4	---	3.1	1.3	---	95	---	5.8	---	10	5.0	---
TOTAL	101.7	94.5	76.5	66.1	4105.8	5080	3892	1377.6	165.9	2604.6	585.2	3179.4
MEAN	3.28	3.15	2.47	2.13	147	164	130	44.4	5.53	84.0	18.9	105
MAX	6.3	4.9	3.2	3.1	1200	596	828	364	23	724	147	633
MIN	1.7	1.7	1.6	1.3	1.1	48	16	5.7	3.6	7.5	4.9	4.1
CFSM	.04	.04	.03	.03	1.75	1.96	1.55	.53	.07	1.00	.23	1.27
IN.	.05	.04	.03	.03	1.82	2.26	1.73	.61	.07	1.16	.26	1.41

WTR YR 1977 TOTAL 21329.3 MEAN 58.4 MAX 1200 MIN 1.1 CFSM .70 IN 9.47

04196200 BROKEN SWORD CREEK AT NEVADA, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND 5 DAY (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)
MAR												
07...	1245	73	575	8.0	4.0	12.0	92	1.5	270	140	78	18
JUN												
13...	1330	4.8	735	8.0	19.5	8.8	95	1.4	350	130	94	29

DATE	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
07...	11	3.4	160	0	131	2.6	79	34	.2	7.6	310	7.0
JUN												
13...	18	3.0	268	0	220	4.3	130	27	.4	5.7	440	.56

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
07...	.05	.15	.10	1	10	5	10	6	30	.0	20	9.4
JUN												
13...	.02	.05	.09	2	10	6	340	2	60	.3	150	7.0

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH

LOCATION.--Lat 40°51'02", long 83°15'23", in sec. 21, T.2 S., R.14 E., Wyandot County, Hydrologic Unit 04100011, on left bank at downstream side of county road bridge, 0.7 mi (1.1 km) downstream from unnamed right bank tributary, 0.8 mi (1.3 km) upstream from Rock Run, and 2 mi (3 km) northwest of Upper Sandusky.

DRAINAGE AREA.--298 mi² (772 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1921 to December 1935, January 1938 to current year. Gage height records collected at site 3 mi (5 km) upstream since 1912 (fragmentary) are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 874: 1927-30, 1933. WSP 1387: 1922(M), 1923-29, 1944. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 792.25 ft (241.478 m) above mean sea level. Prior to Sept. 18, 1924, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair.

AVERAGE DISCHARGE.--53 years, 240 ft³/s (6.797 m³/s), 10.93 in/yr (278 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 10,000 ft³/s (283 m³/s) Jan. 22, 1959; maximum gage height, 15.00 ft (4.572 m) in gage well, 15.55 ft (4.740 m) from outside floodmark, Jan. 22, 1959 (ice jam); minimum discharge, 0.50 ft³/s (0.014 m³/s) Oct. 2, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1937 reached a stage of 14.3 ft (4.36 m), from high-water marks in gage well.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 25	2300	3000	85.0	6.72	2.048	Apr. 4	0900	*3290	93.2	*7.04	2.146

Minimum discharge, 6.6 ft³/s (0.19 m³/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	33	27	14	13	340	230	169	21	607	36	16
2	15	34	23	14	13	222	541	151	20	581	29	18
3	13	37	21	13	13	186	2590	147	21	206	22	20
4	11	37	20	13	13	244	2750	395	19	108	18	65
5	8.3	30	20	13	13	700	897	1070	19	157	63	73
6	9.3	27	20	12	13	500	672	742	19	396	167	41
7	9.8	24	21	12	12	289	464	426	19	177	123	30
8	9.3	22	27	12	12	225	385	268	22	181	76	24
9	19	21	31	36	12	186	292	196	32	105	63	19
10	15	19	28	44	11	177	220	156	33	126	48	24
11	17	19	25	51	11	169	186	132	34	69	49	19
12	18	20	23	57	12	165	151	113	27	48	162	20
13	14	19	22	65	13	347	124	98	23	43	201	36
14	16	19	21	71	20	541	111	87	20	35	138	135
15	13	19	20	79	300	314	93	79	21	30	80	351
16	11	18	19	81	280	230	77	69	45	26	50	306
17	11	16	19	12	200	177	66	73	110	22	40	777
18	11	17	18	13	180	558	58	79	70	21	29	866
19	12	20	17	13	155	1830	55	58	43	27	23	1100
20	16	23	17	14	135	973	55	52	23	29	20	1020
21	17	23	26	15	125	589	53	47	20	47	21	457
22	35	21	22	15	200	643	83	43	19	88	65	243
23	27	21	21	14	310	1210	256	44	17	572	109	170
24	31	19	20	14	1580	705	545	77	16	311	107	131
25	28	19	19	13	2550	403	353	67	15	128	61	105
26	35	22	18	13	1630	279	373	44	14	76	40	85
27	42	22	17	12	696	225	362	32	14	51	30	68
28	38	27	16	12	584	295	264	27	14	41	25	57
29	31	26	16	12	---	720	228	24	18	33	22	48
30	26	31	15	12	---	691	202	22	62	44	20	43
31	31	---	15	13	---	350	---	23	---	39	17	---
TOTAL	611.7	705	644	784	9106	14483	12736	5010	850	4424	1954	6367
MEAN	19.7	23.5	20.8	25.3	325	467	425	162	28.3	143	63.0	212
MAX	42	37	31	81	2550	1830	2750	1070	110	607	201	1100
MIN	8.3	16	15	12	11	165	53	22	14	21	17	16
CFSM	.07	.08	.07	.09	1.09	1.57	1.43	.54	.10	.48	.21	.71
IN.	.08	.09	.08	.10	1.14	1.81	1.59	.63	.11	.55	.24	.79

CAL YR 1976 TOTAL 80150.4 MEAN 219 MAX 5840 MIN 6.2 CFSM .74 IN 10.01
WTR YR 1977 TOTAL 57674.7 MEAN 158 MAX 2750 MIN 8.3 CFSM .53 IN 7.20

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1969 to current year.
pH: April to September 1977.
WATER TEMPERATURES: June 1969 to current year.
DISSOLVED OXYGEN: June 1969 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,300 micromhos Nov. 22, 1971; minimum, 200 micromhos June 18, 1970.
pH: Maximum, 9.6 units July 17, 1977; minimum, 7.0 units June 17, 1977.
WATER TEMPERATURES: Maximum, 33.0°C Aug. 9, 1969; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during 1973 to 1977; minimum, 0.8 mg/L Aug. 29, 1976.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,280 micromhos Jan. 9; minimum, 207 micromhos June 30.
pH: Maximum, 9.6 units July 17; minimum, 7.0 units June 17.
WATER TEMPERATURES: Maximum, 31.5°C July 18-20; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during October to December, April to July, and September; minimum, 1.2 mg/L Oct. 8, 9, Sept. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
09...	1200	188	670	8.0	8.0	11.4	96	2.1	310	150	86	22
JUN												
14...	1145	19	875	8.2	21.5	8.6	97	3.2	350	140	91	29

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
09...	18	3.2	194	0	159	3.1	110	39	.2	7.8	382	5.5
JUN												
14...	46	5.1	256	0	210	2.6	180	49	.5	3.2	528	1.1

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
09...	.05	.29	.15	1	10	6	10	6	30	.0	20	7.5
JUN												
14...	.14	.20	.23	4	20	5	50	6	60	.0	10	6.0

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	830	770	828	773	942	757	---	---	---	---	594	537
2	824	735	828	800	1050	942	---	---	---	---	627	594
3	753	698	815	782	1080	1050	---	---	---	---	657	636
4	720	689	813	782	1080	1030	1260	1250	---	---	690	648
5	779	713	810	782	1120	1090	1270	1240	---	---	639	558
6	854	782	810	761	1110	995	1260	1240	---	---	573	543
7	902	810	773	741	1050	1010	1260	1230	---	---	624	576
8	920	813	809	768	1090	1070	1270	1240	---	---	666	624
9	920	833	827	791	1090	1040	1280	1250	---	---	693	663
10	876	806	846	813	1070	1040	1250	1230	---	---	708	690
11	894	846	846	815	1070	1030	1230	1210	---	---	711	699
12	876	843	849	821	1080	1030	---	---	---	---	726	702
13	908	854	849	819	1100	1060	---	---	---	---	714	642
14	921	885	848	827	1140	1120	1220	1190	---	---	654	621
15	935	893	861	830	1160	1120	1190	1180	---	---	645	618
16	960	924	863	837	1150	1110	1200	1180	---	---	675	648
17	953	921	924	842	1250	1060	1230	1200	---	---	699	675
18	933	890	934	909	1100	1060	1270	1240	---	---	708	504
19	959	932	925	889	1100	1080	1270	1250	---	---	495	405
20	999	948	928	906	1080	983	1270	1250	---	---	519	426
21	960	914	915	901	1020	993	1260	1240	---	---	570	522
22	953	902	912	885	1110	1010	1240	1230	804	729	582	516
23	914	637	909	876	1160	1100	1240	1220	762	381	513	486
24	836	764	907	877	1160	1110	1220	1200	375	309	552	489
25	849	776	924	900	1160	1100	1220	1210	321	294	606	555
26	905	852	907	860	1100	1070	1230	1200	447	315	645	606
27	902	779	877	798	1080	1060	1250	1220	501	420	666	642
28	783	752	798	704	1060	995	1240	1200	546	501	672	624
29	827	792	730	703	1010	978	---	---	---	---	621	552
30	813	740	750	715	998	995	---	---	---	---	549	522
31	768	704	---	---	---	---	---	---	---	---	594	534
MONTH	999	689	934	703	1250	757	1280	1180	804	294	726	405

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	642	597	663	651	840	813	600	291	722	470	909	816
2	648	435	681	654	858	837	474	339	686	578	915	642
3	429	330	690	666	876	852	537	477	671	542	933	777
4	429	327	687	522	897	873	621	540	737	578	855	729
5	501	435	528	483	906	885	630	618	617	479	759	732
6	525	501	546	483	906	900	624	369	623	428	783	588
7	564	525	591	549	930	906	588	399	680	476	690	603
8	582	561	633	594	---	---	620	600	680	530	765	696
9	612	585	669	633	---	---	650	581	653	558	858	774
10	645	615	696	672	---	---	572	488	756	600	945	738
11	669	645	723	693	---	---	662	542	738	351	885	744
12	681	669	741	717	---	---	659	530	684	435	837	762
13	684	675	753	723	873	864	677	503	657	567	831	750
14	702	678	756	726	876	864	710	536	600	525	---	---
15	708	672	756	726	897	840	659	572	678	600	---	---
16	717	675	771	741	852	795	632	584	744	642	---	---
17	726	684	777	672	822	414	617	527	744	597	---	---
18	741	702	741	546	858	666	662	497	792	699	---	---
19	744	714	789	645	849	825	740	515	801	732	---	---
20	753	714	789	765	843	813	611	536	801	747	---	---
21	750	705	807	792	852	804	692	257	789	660	---	---
22	756	708	807	741	927	861	734	518	738	555	---	---
23	741	651	813	786	939	915	797	350	729	642	---	---
24	648	573	807	687	957	891	452	359	762	612	---	---
25	609	570	789	750	990	921	536	437	681	606	---	---
26	612	582	783	750	957	891	590	497	777	699	---	---
27	636	597	765	714	948	918	608	473	753	699	---	---
28	657	636	723	693	948	912	644	470	768	717	---	---
29	648	636	753	723	948	867	680	521	810	729	---	---
30	654	645	780	753	900	207	680	503	924	750	---	---
31	---	---	807	780	---	---	692	491	918	801	---	---
MONTH	756	327	813	483	990	207	797	257	924	351	945	588
YEAR	1280	207										

04196500 SANDUSKY RIVERNEAR UPPER SANDUSKY, OH--Continued

PH (UNITS) APRIL TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	9.4	8.2	7.8	7.4	8.1	7.1	8.3	7.5		
2	---	---	8.8	8.2	8.2	7.7	7.3	7.1	8.5	7.9		
3	---	---	8.8	8.3	8.5	8.0	7.5	7.3	8.8	8.0		
4	---	---	8.6	7.5	8.4	8.0	7.5	7.0	8.9	8.1		
5	---	---	7.7	7.2	8.2	7.7	7.5	7.3	8.9	7.8		
6	8.3	8.1	8.0	7.8	8.4	7.8	7.7	7.0	8.0	7.3		
7	8.7	8.2	8.4	8.0	8.1	7.9	7.7	7.2	7.5	7.3		
8	8.8	8.4	8.5	8.1	---	---	7.8	7.5	7.7	7.5		
9	9.1	8.4	8.6	8.3	---	---	8.0	7.6	8.1	7.5		
10	9.2	7.6	8.7	8.3	---	---	8.0	7.5	7.8	7.5		
11	8.4	7.7	8.9	8.1	---	---	8.1	7.6	7.9	7.3		
12	8.4	7.6	8.6	7.8	---	---	7.9	7.5	7.7	7.3		
13	8.3	7.8	8.7	7.7	8.2	7.9	7.8	7.4	7.6	7.3		
14	8.7	8.1	8.6	7.9	8.1	7.9	8.2	7.6	7.5	7.3		
15	8.8	8.4	8.6	7.9	8.9	8.7	8.3	7.6	7.6	7.5		
16	8.9	8.3	8.5	7.9	9.2	8.4	9.0	8.1	7.8	7.6		
17	9.0	8.2	8.5	7.9	8.7	7.0	9.6	8.5	8.0	7.6		
18	8.8	8.2	8.7	7.3	8.3	7.4	9.3	8.2	8.2	7.6		
19	8.8	8.2	8.4	7.5	8.7	8.0	9.4	7.6	8.2	7.9		
20	9.0	8.2	8.6	7.7	8.7	8.2	9.0	7.8	8.7	8.1		
21	9.1	8.1	8.3	7.6	8.9	8.2	8.5	7.0	8.7	8.2		
22	8.6	8.2	8.6	7.9	8.8	8.2	8.4	7.0	8.8	7.6		
23	8.8	8.1	8.7	8.0	8.8	8.3	7.9	7.4	8.5	7.9		
24	8.6	8.0	9.0	7.9	8.7	8.2	7.5	7.3	7.9	7.6		
25	8.5	8.2	8.0	7.5	9.2	8.2	7.6	7.4	8.0	7.6		
26	8.7	7.7	8.3	7.6	9.1	8.4	7.9	7.6	8.3	7.7		
27	8.9	7.7	8.8	8.1	8.9	8.1	8.0	7.6	7.9	7.3		
28	8.9	7.9	8.8	7.7	9.0	8.1	8.1	7.7	---	---		
29	8.7	8.4	8.7	8.0	9.0	8.1	8.1	7.7	---	---		
30	9.2	8.8	8.1	7.7	8.7	8.1	8.4	7.8	---	---		
31	---	---	7.9	7.5	---	---	8.5	7.9	---	---		
MONTH	9.2	7.6	9.4	7.2	9.2	7.0	9.6	7.0	8.9	7.3		

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.0	12.5	6.5	4.5	0.5	0.0	---	---	---	---	4.0	2.5
2	18.0	13.0	7.0	5.0	0.5	0.0	---	---	---	---	4.5	2.0
3	19.0	14.0	7.0	6.0	1.0	0.5	---	---	---	---	5.0	2.5
4	19.0	13.5	6.0	5.5	1.0	0.0	1.0	0.5	---	---	6.5	5.5
5	20.0	14.0	6.0	5.0	0.5	0.0	0.5	0.0	---	---	6.5	4.5
6	16.5	14.5	6.5	4.0	1.0	0.0	1.0	0.0	---	---	6.5	4.0
7	14.0	13.0	6.0	4.0	1.5	0.5	0.5	0.0	---	---	6.0	5.0
8	15.0	10.5	5.0	3.0	1.0	0.0	1.0	0.0	---	---	7.0	3.5
9	12.0	11.0	5.5	3.5	1.0	0.5	0.5	0.0	---	---	9.0	5.0
10	12.5	10.0	6.0	4.0	1.0	0.5	0.5	0.0	---	---	11.0	7.0
11	14.5	10.5	6.0	4.0	1.0	0.5	0.5	0.0	---	---	12.0	8.5
12	15.0	11.0	4.5	3.0	1.5	0.5	---	---	---	---	11.5	10.5
13	17.0	12.5	5.0	2.5	1.0	0.5	---	---	---	---	11.5	10.0
14	15.0	11.0	5.0	2.0	1.5	0.5	---	---	---	---	10.0	9.0
15	14.5	11.5	4.0	2.0	1.5	0.5	---	---	---	---	12.0	7.5
16	13.5	9.5	4.5	1.5	1.5	0.0	---	---	---	---	12.0	10.0
17	12.0	8.5	4.5	2.0	2.0	0.0	---	---	---	---	10.0	7.5
18	12.0	6.5	3.5	3.0	2.0	0.5	---	---	---	---	8.0	5.5
19	9.0	7.0	5.5	3.0	3.0	0.5	---	---	---	---	6.0	4.5
20	8.5	8.0	4.5	2.5	2.5	0.5	---	---	---	---	5.5	5.0
21	10.0	7.0	3.0	2.0	0.5	0.0	---	---	---	---	7.0	4.0
22	8.0	6.0	2.5	1.5	1.5	0.5	---	---	3.0	2.0	6.0	4.5
23	7.0	5.5	2.5	1.0	0.5	0.0	---	---	3.0	2.0	5.5	3.5
24	8.5	6.5	2.0	0.5	1.0	0.0	---	---	2.5	2.0	5.5	3.0
25	8.5	7.5	4.0	1.0	0.5	0.0	---	---	2.5	1.5	7.0	3.5
26	7.5	6.5	6.0	2.5	0.0	0.0	1.0	0.5	2.0	1.5	8.5	5.0
27	6.5	5.5	7.0	6.0	0.5	0.0	1.0	0.5	3.0	2.5	10.5	7.0
28	6.0	4.0	5.5	0.5	0.5	0.0	1.0	0.0	3.0	2.5	12.0	9.5
29	6.5	4.0	1.5	0.0	0.5	0.0	---	---	---	---	15.0	11.5
30	6.0	5.5	0.5	0.0	0.5	0.0	---	---	---	---	16.5	13.0
31	7.0	5.5	---	---	---	---	---	---	---	---	15.0	11.5
MONTH	20.0	4.0	7.0	0.0	3.0	0.0	1.0	0.0	3.0	1.5	16.5	2.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.0	9.5	16.5	12.0	22.5	19.5	21.5	19.0	25.5	22.0	30.0	23.0
2	13.0	11.0	17.0	16.0	22.0	18.0	22.5	19.5	26.0	20.5	29.0	24.0
3	13.0	11.5	17.0	15.0	24.0	16.5	22.5	20.0	27.5	21.5	26.5	22.0
4	13.0	11.5	17.0	15.5	25.5	17.0	24.5	22.0	29.0	22.0	25.0	21.0
5	11.0	7.5	18.0	15.0	23.5	20.5	28.0	23.5	27.0	23.0	25.5	22.0
6	7.5	6.0	18.0	17.5	21.5	17.0	27.0	24.5	25.0	24.0	24.0	22.0
7	6.5	4.5	17.5	16.0	17.0	15.0	28.5	25.5	25.0	23.5	25.0	20.0
8	7.0	4.0	17.5	14.5	---	---	28.5	26.0	25.5	23.5	25.5	19.5
9	8.0	4.5	15.0	12.5	---	---	27.5	26.0	25.5	22.5	26.5	20.5
10	12.5	6.5	14.5	11.0	---	---	26.0	23.5	25.0	23.0	24.5	20.0
11	17.0	11.0	16.5	12.5	---	---	25.5	22.5	26.0	22.5	23.5	17.5
12	20.0	14.5	17.5	14.5	---	---	27.0	22.5	24.0	21.5	19.5	17.0
13	21.0	16.5	20.5	15.5	20.0	19.0	28.5	24.5	23.0	21.5	19.0	18.0
14	19.0	16.5	21.0	18.0	22.0	19.5	29.0	23.0	24.0	22.0	---	---
15	19.0	15.0	21.5	16.0	24.5	18.0	31.0	25.5	25.5	22.5	---	---
16	19.0	15.0	23.0	16.5	27.0	19.5	30.5	27.0	25.0	22.5	---	---
17	19.5	15.5	24.0	18.5	24.5	20.0	30.5	25.0	25.5	22.0	---	---
18	20.5	16.0	24.5	20.0	26.0	22.0	31.5	25.0	23.5	19.5	---	---
19	20.5	16.5	26.0	20.5	26.0	21.5	31.5	25.5	21.0	18.5	---	---
20	21.0	17.0	27.0	21.0	26.0	21.5	31.5	27.0	23.5	17.0	---	---
21	20.5	17.5	26.5	22.0	26.0	20.0	31.0	24.5	20.5	19.0	---	---
22	19.0	18.0	25.0	22.0	23.5	19.5	27.5	22.5	22.5	18.5	---	---
23	18.0	14.5	24.0	22.0	26.0	18.0	24.0	21.5	22.5	20.0	---	---
24	14.5	13.0	26.0	21.0	26.0	20.0	24.0	21.0	21.5	19.5	---	---
25	13.0	11.0	26.0	21.5	29.5	21.5	25.0	23.0	21.5	17.5	---	---
26	12.0	9.0	25.5	20.5	30.5	21.5	24.5	21.5	22.5	17.0	---	---
27	14.5	10.0	26.0	20.0	27.5	21.0	24.5	19.5	25.5	21.0	---	---
28	14.0	10.5	27.0	20.5	29.0	22.5	24.5	19.5	28.0	22.5	---	---
29	12.0	8.5	27.0	21.5	27.5	22.5	23.5	22.0	24.5	23.0	---	---
30	14.5	10.0	25.0	20.0	24.0	19.5	25.0	21.5	25.5	21.5	---	---
31	---	---	25.5	20.0	---	---	25.5	22.0	27.5	21.0	---	---
MONTH	21.0	4.0	27.0	11.0	30.5	15.0	31.5	19.0	29.0	17.0	30.0	17.0
YEAR	31.5	0.0										

04196500 SANDUSKY RIVER NEAR UPPER SANDUSKY, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	9.1	7.2	15.0	11.3	15.0	12.5	---	---	---	---	12.1	11.7
2	10.4	7.0	15.0	12.6	15.0	10.8	---	---	---	---	12.6	12.1
3	11.0	6.7	15.0	12.1	14.5	10.4	---	---	---	---	12.2	11.7
4	12.8	6.6	15.0	12.3	13.5	10.8	---	---	---	---	11.9	10.9
5	15.0	6.0	15.0	12.6	15.0	10.4	---	---	---	---	11.9	10.8
6	8.9	5.0	15.0	13.8	14.9	10.6	---	---	---	---	11.6	11.2
7	4.8	2.8	15.0	14.5	14.5	9.6	---	---	---	---	11.7	11.1
8	13.3	1.2	15.0	15.0	13.8	10.3	---	---	---	---	11.9	11.5
9	10.3	1.2	15.0	15.0	14.8	9.7	---	---	---	---	11.6	10.4
10	11.5	5.8	15.0	14.8	15.0	12.7	---	---	---	---	10.9	10.2
11	12.6	6.8	15.0	15.0	15.0	10.4	---	---	---	---	10.9	10.0
12	12.5	6.9	15.0	15.0	15.0	12.0	---	---	---	---	10.5	9.4
13	14.0	5.3	15.0	15.0	15.0	14.2	7.5	6.4	---	---	10.1	9.3
14	12.3	5.2	15.0	15.0	15.0	13.5	6.8	6.3	---	---	10.5	9.5
15	13.6	5.3	15.0	15.0	15.0	14.0	7.4	6.3	---	---	11.0	10.0
16	14.1	5.1	15.0	15.0	15.0	13.8	7.6	6.6	---	---	10.5	9.5
17	13.9	5.1	15.0	15.0	15.0	10.7	7.6	6.4	---	---	11.4	9.9
18	15.0	6.1	15.0	15.0	15.0	9.9	7.3	6.5	---	---	10.5	9.1
19	13.7	6.3	15.0	15.0	15.0	10.0	6.9	6.1	---	---	11.7	9.1
20	9.0	4.2	15.0	15.0	13.8	9.4	6.2	5.5	---	---	10.9	9.9
21	10.9	4.3	15.0	15.0	14.6	9.9	6.3	5.4	---	---	12.0	10.4
22	10.4	5.6	15.0	15.0	14.8	10.9	6.8	5.7	10.1	9.2	11.1	9.5
23	11.1	8.9	15.0	15.0	13.8	10.0	7.1	6.2	10.4	8.6	10.8	9.4
24	10.1	8.8	15.0	15.0	15.0	9.7	6.9	6.5	10.7	10.0	11.3	10.0
25	10.1	8.3	15.0	15.0	14.9	9.2	7.0	6.5	13.3	10.4	10.6	9.8
26	10.0	7.9	15.0	12.3	12.0	8.3	7.6	6.5	13.0	11.4	10.3	9.5
27	11.0	9.1	14.8	10.7	11.1	7.5	7.3	6.1	11.9	11.3	9.8	9.1
28	12.8	10.3	15.0	11.2	9.4	6.3	6.9	5.7	12.0	11.7	9.0	8.0
29	14.8	11.3	15.0	11.6	9.5	6.1	---	---	---	---	8.6	7.5
30	13.5	12.0	15.0	12.8	8.6	6.5	---	---	---	---	8.1	7.0
31	12.5	10.4	---	---	---	---	---	---	---	---	8.3	7.2
MONTH	15.0	1.2	15.0	10.7	15.0	6.1	7.6	5.4	13.3	8.6	12.6	7.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.0	8.2	11.6	9.3	8.8	4.6	7.3	5.9	7.9	3.7	13.5	6.7
2	9.3	7.0	9.6	7.1	11.1	5.5	7.1	6.3	9.5	5.7	15.0	6.6
3	8.1	6.6	10.3	7.8	13.1	6.8	7.1	6.7	11.6	6.0	10.7	3.7
4	9.0	6.9	8.5	6.7	14.1	6.9	6.8	6.1	11.9	6.5	9.0	5.4
5	10.0	9.1	7.6	7.2	12.6	6.2	6.7	6.0	10.8	5.6	10.3	6.6
6	10.8	10.0	7.5	7.3	10.8	6.7	6.4	5.3	6.2	5.0	12.6	5.7
7	11.2	10.8	7.9	7.3	8.7	7.2	6.1	4.8	6.3	5.4	15.0	6.7
8	11.7	11.0	8.9	7.4	---	---	5.9	5.0	6.3	5.8	11.4	5.3
9	11.8	11.1	9.5	8.1	---	---	6.4	5.2	7.8	5.7	11.3	4.7
10	11.4	10.1	11.1	8.9	---	---	6.5	5.8	7.7	5.6	6.4	1.2
11	10.6	9.3	11.0	8.6	---	---	6.5	6.2	8.6	5.7	10.9	4.5
12	10.7	8.5	11.2	8.1	---	---	6.6	5.9	7.3	6.0	11.0	5.9
13	11.3	8.0	11.5	7.5	8.3	6.8	6.3	4.2	7.5	6.7	6.8	5.4
14	11.9	8.0	10.7	6.6	8.4	5.7	7.1	5.2	7.5	6.8	---	---
15	12.6	8.3	11.1	6.2	15.0	10.3	10.0	5.1	6.9	6.3	---	---
16	12.8	8.6	9.7	5.9	14.3	7.7	13.9	6.3	7.0	6.2	---	---
17	12.6	8.2	9.4	5.2	9.8	4.9	15.0	7.2	7.5	5.9	---	---
18	12.8	7.8	8.4	5.8	10.8	4.6	15.0	9.3	8.7	6.3	---	---
19	14.2	7.4	13.6	5.5	12.5	5.7	13.7	5.6	9.4	6.8	---	---
20	14.1	7.5	13.4	6.3	11.3	6.3	11.4	5.0	12.0	8.2	---	---
21	15.0	6.8	9.8	4.7	14.6	6.1	10.7	4.3	10.7	7.6	---	---
22	9.5	7.1	13.0	5.1	13.5	6.7	7.4	3.5	11.0	5.6	---	---
23	8.2	6.5	13.7	5.6	13.5	7.7	6.3	4.4	8.9	7.1	---	---
24	8.8	7.6	15.0	6.9	12.8	7.9	6.5	6.2	7.8	5.9	---	---
25	9.6	8.7	8.8	5.7	15.0	7.2	6.3	5.6	9.3	7.0	---	---
26	9.8	9.4	11.5	5.3	14.8	7.1	6.1	5.8	9.7	6.9	---	---
27	10.2	9.5	15.0	7.9	13.0	6.0	6.8	6.0	10.0	6.1	---	---
28	9.7	8.1	15.0	9.5	14.2	5.5	7.4	6.1	10.9	5.9	---	---
29	11.4	9.4	14.0	7.5	12.0	5.4	7.6	5.8	8.7	6.0	---	---
30	11.6	10.0	9.9	5.6	14.3	6.6	9.6	5.8	11.0	3.9	---	---
31	---	---	9.0	5.3	---	---	9.2	6.1	12.8	5.4	---	---
MONTH	15.0	6.5	15.0	4.7	15.0	4.6	15.0	3.5	12.8	3.7	15.0	1.2
YEAR	15.0	1.2										

04196800 TYMOCHTEE CREEK AT CRAWFORD, OH

LOCATION.--Lat 40°55'22", long 83°20'56", in SE 1/4 sec. 27, T.1 S., R.13 E., Wyandot County, Hydrologic Unit 04100011, on right bank at downstream side of bridge on State Highway 199 (formerly U.S. Highway 23), 0.4 mi (0.6 km) northwest of Crawford, 1.5 mi (2.4 km) downstream from Lick Run, 2.7 mi (4.3 km) upstream from Little Tymochtee Creek, and 3 mi (5 km) southeast of Carey.

DRAINAGE AREA.--229 mi² (593 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1961-63, and annual maximum, water years 1961-64, June 1964 to current year.

REVISED RECORDS.--WRD Ohio 1969: 1964(P), 1966(M), 1967(P).

GAGE.--Water-stage recorder. Datum of gage is 785.86 ft (239.530 m) above mean sea level.

REMARKS.--Records fair except those for winter periods, which are poor. Beginning Mar. 9, 1972 water was diverted at a point 29.4 mi (47.3 km) upstream from station into Killdeer Reservoir. Storage is available for low-flow augmentation. During the year, withdrawals totaled 542 mil gal (0.757 hm³) and releases totaled 484 mil gal (0.303 hm³).

AVERAGE DISCHARGE.--13 years, 166 ft³/s (4.701 m³/s).

EXTREMES FOR PERIOD OF RECORD.-- Maximum discharge, 6,040 ft³/s (171 m³/s) Apr. 22, 1964, gage height, 9.82 ft (2.993 m); maximum gage height, 11.21 ft (3.417 m) Mar. 6, 1963 (backwater from ice); no flow Aug. 10, Sept. 13-18, Oct. 23 to Nov. 4, 1964, Aug. 23-26, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1959 reached a stage of 12.9 ft (3.93 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft³/s (49.3 m³/s) Apr. 4, gage height, 6.17 ft (1.881 m), no peak above base of 1,800 ft³/s (51.0 m³/s); minimum daily discharge, 0.22 ft³/s (0.006 m³/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	4.8	3.1	1.9	1.4	365	143	116	7.7	359	1.8	3.0
2	.64	4.8	3.0	1.9	1.4	214	242	92	7.0	353	1.8	8.4
3	.40	4.1	2.9	1.9	1.3	101	925	79	6.4	238	1.8	28
4	.51	4.1	2.8	1.9	1.3	156	1410	182	5.8	97	1.8	4.1
5	.64	6.4	2.7	1.9	1.3	297	1490	591	7.0	50	4.1	2.3
6	.22	4.8	2.6	1.9	1.3	391	724	724	7.7	36	2.6	2.0
7	.40	3.5	2.6	1.9	1.3	205	379	379	6.4	33	3.5	1.6
8	.64	3.5	2.5	1.8	1.2	147	260	210	6.4	39	5.3	1.0
9	.64	2.6	2.5	1.8	1.2	71	195	137	10	22	3.5	.80
10	1.3	3.0	2.4	1.8	1.2	55	135	95	8.4	14	3.0	.64
11	1.0	4.1	2.3	1.8	1.2	51	101	71	9.2	10	6.0	.51
12	.64	4.1	2.3	1.8	1.3	54	84	56	21	7.7	8.5	.80
13	.40	2.6	2.2	1.7	1.5	136	78	45	22	5.8	11	5.3
14	.51	2.3	2.2	1.7	2.5	301	60	39	17	6.4	9.6	60
15	.40	1.8	2.2	1.7	4.3	232	50	36	13	5.8	7.6	57
16	.40	1.8	2.2	1.7	3.3	125	43	32	11	4.1	6.5	162
17	.80	1.6	2.1	1.7	2.5	78	35	28	31	3.5	10	315
18	1.0	2.0	2.1	1.7	2.2	263	33	25	18	3.0	8.4	210
19	1.0	3.5	2.1	1.7	2.0	692	33	30	12	2.6	6.4	334
20	1.6	3.5	2.0	1.6	1.9	877	33	32	7.7	1.8	4.8	229
21	2.0	3.5	2.0	1.6	5.5	712	36	26	5.8	1.6	4.8	112
22	1.3	3.0	2.0	1.6	2.3	459	36	20	5.3	31	7.0	64
23	1.3	2.3	2.0	1.6	6.0	706	45	17	4.8	18	17	38
24	2.3	2.3	2.0	1.6	23	792	129	16	3.5	6.4	7.7	24
25	3.0	2.0	2.0	1.5	796	439	189	14	3.5	10	4.8	16
26	2.6	3.0	2.0	1.5	881	235	157	15	2.3	22	4.8	10
27	4.8	4.8	2.0	1.5	536	158	162	14	1.8	10	6.4	6.4
28	4.8	3.9	2.0	1.5	401	255	162	14	2.6	4.1	5.3	5.8
29	4.1	3.5	2.0	1.4	---	442	129	11	4.1	2.6	4.1	4.8
30	2.6	3.3	2.0	1.4	---	419	129	11	4.1	1.8	3.5	3.5
31	5.8	---	1.9	1.4	---	240	---	9.2	---	1.6	3.0	---
TOTAL	48.54	100.5	70.7	52.4	2686.4	9668	7627	3166.2	272.5	1400.8	176.4	1709.95
MEAN	1.57	3.35	2.28	1.69	95.9	312	254	102	9.08	45.2	5.69	57.0
MAX	5.8	6.4	3.1	1.9	881	877	1490	724	31	359	17	334
MIN	.22	1.6	1.9	1.4	1.2	51	33	9.2	1.8	1.6	1.8	.51

CAL YR 1976 TOTAL 28857.14 MEAN 78.8 MAX 1900 MIN .22
WTR YR 1977 TOTAL 26979.39 MEAN 73.9 MAX 1490 MIN .22

04196800 TYMOCHTEE CREEK AT CRAWFORD, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA+MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 24...	0945	832	405	7.8	3.0	11.7	87	2.7	190	110	50	15
JUN 14...	1345	16	960	8.4	22.0	11.9	140	5.7	470	260	120	41

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 24...	7.3	3.4	94	0	77	2.4	60	22	.1	6.9	212	6.2
JUN 14...	26	3.5	246	6	212	1.6	250	35	.4	3.7	607	.00

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 24...	.05	.08	.25	4	10	10	610	0	20	.0	60	9.0
JUN 14...	.00	.03	.10	4	<10	5	30	3	10	.0	20	7.2

04197000 SANDUSKY RIVER NEAR MEXICO, OH

LOCATION.--Lat 41°02'39", long 83°11'42", in sec. 13, T.1 N., R.14 E., Seneca County, Hydrologic Unit 04100011, on right bank at downstream side of county road bridge, 4.1 mi (6.6 km) upstream from Honey Creek, 4.2 mi (6.8 km) north of Mexico, 4.9 mi (7.9 km) south of Tiffin, and 8.3 mi (13.4 km) downstream from Mile Run.

DRAINAGE AREA.--774 mi² (2,005 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1898 to November 1900 (gage height and discharge measurements only), March 1923 to December 1935, July 1938 to current year. Discharge records for November 1898 to November 1900, published in 22nd Annual Report, Part 4, are unreliable and should not be used.

REVISED RECORDS.--WSP 714: 1929-30. WSP 874: 1927(M). WSP 1387: 1925, 1928-29, 1930(M), 1931. WSP 1912: Drainage area. See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 733.1 ft (223.45 m) above mean sea level, adjustment of 1912. Prior to Aug. 15, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods and those for period of no gage-height record, Jan. 28 to March 1, which are fair. Water-quality data collected at this site 1965, 1966, 1969, 1971 to 1973. Sediment data collected 1969 to 1974.

AVERAGE DISCHARGE.--51 years, 572 ft³/s (16.20 m³/s), 10.04 in/yr (255 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft³/s (535 m³/s) Jan. 23, 1959, gage height, 22.43 ft (6.837 m), from floodmark; minimum, 1.8 ft³/s (0.051 m³/s) Oct. 31, 1942, during repairs to small dam upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1937 reached a stage of 22.5 ft (6.86 m), from information by local residents, discharge, 19,000 ft³/s (538 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,200 ft³/s (119 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 26	1430	*5300	150	*11.95	3.642	Apr. 5	0230	4710	133	11.25	3.429

Minimum daily discharge, 29 ft³/s (0.821 m³/s) Feb. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	67	42	37	32	1790	690	434	58	740	65	49
2	54	71	42	36	33	780	907	394	55	1630	62	48
3	48	76	42	34	33	560	3920	384	52	928	57	104
4	40	74	41	34	34	700	4500	655	49	447	49	158
5	36	72	41	33	33	1750	4360	2150	49	271	54	104
6	34	70	41	33	32	1250	2900	2390	48	474	108	105
7	34	66	41	32	31	800	1620	1600	48	477	201	77
8	34	62	41	32	30	650	1150	875	46	327	156	60
9	34	55	40	32	30	500	855	576	50	264	113	52
10	34	51	39	32	29	470	655	420	65	256	98	49
11	37	50	39	32	29	430	515	329	64	158	92	49
12	41	47	39	32	31	470	431	265	67	102	308	46
13	41	45	39	32	45	800	356	224	69	80	459	51
14	48	44	39	32	74	1350	303	196	69	69	336	151
15	40	43	38	32	200	900	271	173	60	59	205	436
16	38	41	41	32	450	640	241	157	52	53	131	629
17	38	40	41	32	520	460	215	141	51	47	96	1710
18	36	39	41	32	580	1500	200	142	192	44	83	1900
19	35	38	41	34	520	4300	187	149	119	45	70	1960
20	36	38	46	36	450	3400	175	130	85	48	59	2130
21	37	41	50	33	400	2500	260	123	64	43	59	1310
22	41	44	58	40	370	1000	450	109	51	99	79	658
23	45	50	44	41	1050	2750	740	100	48	334	167	408
24	54	46	44	41	3760	2900	1200	96	43	576	179	284
25	58	43	43	41	4870	1900	1250	125	45	328	150	213
26	64	44	43	36	5240	1300	1150	123	42	185	103	174
27	70	44	42	36	4450	800	840	98	38	131	88	142
28	71	44	41	34	2810	1150	700	81	36	95	70	119
29	74	43	40	32	---	1800	590	72	36	77	62	106
30	71	43	39	32	---	1830	497	64	41	68	58	94
31	69	---	38	32	---	1190	---	62	---	68	56	---
TOTAL	1450	1531	1296	1059	26166	43420	32128	12837	1792	8515	3849	13376
MEAN	46.8	51.0	41.8	34.2	935	1401	1071	414	59.7	275	124	446
MAX	74	76	58	41	5240	4300	4500	2390	192	1630	459	2130
MIN	34	38	38	32	29	430	175	62	36	40	49	46
CFSM	.06	.07	.05	.04	1.21	1.81	1.38	.54	.08	.36	.16	.58
IN.	.07	.07	.06	.05	1.26	2.09	1.54	.62	.09	.41	.18	.64

CAL YR 1976 TOTAL 177885 MEAN 486 MAX 11000 MIN 32 CFSM .63 IN 8.55
WTR YR 1977 TOTAL 147419 MEAN 404 MAX 5240 MIN 29 CFSM .52 IN 7.09

04197000 SANDUSKY RIVER NEAR MEXICO, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965, 1966, 1969, 1971 to 1973, 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 29...	1315	1650	540	7.7	13.5	9.9	94	2.4	250	140	67	19
JUN 20...	1500	79	940	8.4	25.5	11.2	140	5.9	450	240	110	42

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 29...	11	3.8	134	0	110	4.3	82	29	.2	6.9	285	7.3
JUN 20...	29	5.0	242	8	212	1.6	240	45	.4	.1	599	.03

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 29...	.06	.12	.27	3	20	9	20	6	30	.0	20	--
JUN 20...	.00	.01	.19	4	<10	4	20	7	30	.0	30	6.9

04197100 HONEY CREEK AT MELMORE, OH

LOCATION.--Lat 41°01'20", long 83°06'35", Seneca County, Hydrologic Unit 04100011, at bridge on State Highways 67 and 100 at Melmore, 1.5 mi (2.4 km) upstream from Buckeye Creek.

DRAINAGE AREA.--149 mi² (386 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Annual maximum, water years 1961-75, February 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 818 ft (250 m) from topographic map.

REMARKS.--Records good except those for winter periods, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 3,850 ft³/s (109 m³/s) March 1963; Maximum gage height, 10.58 ft (3.225 m) March 1963 (ice jam); minimum recorded discharge, 1.0 ft³/s (0.028 m³/s) Feb. 1-10, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,240 ft³/s (35.1 m³/s) Feb. 25, no peak above base of 1,500 ft³/s (42.5 m³/s), gage height, 6.63 ft (2.021 m); minimum, 1.0 ft³/s (0.028 m³/s) Feb. 1-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	6.6	2.7	1.6	1.1	316	139	93	5.8	77	5.9	4.8
2	6.2	7.5	2.6	1.6	1.1	196	302	82	5.8	210	4.8	4.5
3	4.7	9.1	2.5	1.5	1.0	140	934	99	8.3	148	3.7	4.3
4	4.0	9.1	2.4	1.5	1.0	215	850	311	7.9	48	3.4	3.8
5	3.7	8.9	2.4	1.5	1.0	416	524	628	7.1	465	3.8	3.3
6	4.6	8.1	2.3	1.5	1.0	365	332	530	7.0	610	3.6	5.8
7	6.1	7.2	2.3	1.5	1.0	206	254	255	6.4	336	5.5	5.5
8	5.9	5.7	2.2	1.4	1.0	145	207	122	6.0	267	7.0	5.8
9	5.7	4.5	2.2	1.4	1.0	116	153	71	7.0	252	11	4.4
10	6.9	4.5	2.1	1.4	1.0	109	111	51	7.2	114	9.6	3.6
11	7.1	4.6	2.1	1.4	1.1	97	84	39	14	46	11	2.7
12	6.0	4.6	2.0	1.4	1.3	85	68	31	11	40	35	2.3
13	2.6	4.6	2.0	1.4	1.8	161	57	27	8.2	87	182	3.4
14	2.8	4.3	2.0	1.3	2.4	214	51	24	7.1	42	114	14
15	2.7	4.1	2.0	1.3	3.8	152	45	21	6.3	20	52	44
16	2.7	4.1	1.9	1.3	5.0	106	40	18	6.0	12	30	65
17	2.4	4.1	1.9	1.3	8.4	82	37	16	5.5	9.3	18	178
18	2.8	3.5	1.9	1.3	12	488	35	16	5.1	8.6	13	315
19	3.0	3.4	1.9	1.3	19	877	32	13	4.7	8.7	11	417
20	3.5	3.3	1.8	1.2	22	777	31	11	4.1	6.9	8.7	528
21	3.8	3.2	1.8	1.2	17	447	33	10	3.8	6.1	8.0	449
22	3.8	2.7	1.8	1.2	21	518	63	9.6	3.6	5.5	8.4	205
23	6.0	2.6	1.8	1.2	227	784	140	9.6	3.7	77	22	100
24	6.6	2.6	1.7	1.2	721	708	314	9.5	3.8	87	30	53
25	6.3	2.6	1.7	1.2	1040	366	271	9.1	3.9	40	16	35
26	7.8	2.9	1.7	1.2	1000	95	235	9.0	3.8	25	9.6	25
27	10	3.3	1.7	1.2	792	[illegible]	220	8.1	3.5	18	7.8	20
28	8.8	3.2	1.7	1.1	527	[illegible]	153	7.6	3.0	11	6.7	16
29	7.3	3.0	1.6	1.1	---	516	141	6.6	3.4	8.4	6.0	13
30	6.7	2.8	1.6	1.1	---	447	128	6.0	4.1	7.1	5.9	10
31	6.7	---	1.6	1.1	---	240	---	5.8	---	6.3	4.9	---
TOTAL	166.8	140.7	61.9	40.9	4432.0	9950	5984	2548.9	177.1	3098.9	658.3	2541.2
MEAN	5.38	4.69	2.00	1.32	158	321	199	82.2	5.90	100	21.2	84.7
MAX	10	9.1	2.7	1.6	1040	877	934	628	14	610	182	528
MIN	2.4	2.6	1.6	1.1	1.0	82	31	5.8	3.0	5.5	3.4	2.3
CFSM	.04	.03	.01	.009	1.06	2.15	1.34	.55	.04	.67	.14	.57
IN.	.04	.04	.02	.01	1.11	2.48	1.49	.64	.04	.77	.16	.63

WTR YR 1977 TOTAL 29800.7 MEAN 81.6 MAX 1040 MIN 1.0 CFSM .55 IN 7.44

04197100 HONEY CREEK AT MELMORE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 07...	1545	180	520	7.8	4.5	12.0	92	2.4	230	150	66	17
JUN 13...	1515	10	700	8.2	20.5	11.2	120	1.8	320	110	85	27

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 07...	10	4.3	107	0	88	2.7	64	32	.2	7.9	274	4.4
JUN 13...	21	4.2	258	0	212	2.6	100	31	.3	6.1	402	3.4

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 07...	.09	.31	.13	2	10	12	20	11	30	.0	20	7.6
JUN 13...	.02	.06	.13	2	10	4	60	2	10	.2	10	6.3

04197300 WOLF CREEK AT BETTSVILLE, OH

LOCATION.--Lat 41°14'50", long 83°14'08", Seneca County, Hydrologic Unit 04100011, at bridge on State Highway 590 at Bettsville, 3.5 mi (5.6 km) upstream from East Branch.

DRAINAGE AREA.--66.2 mi² (171.5 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Annual maximum, water years 1961-75. February 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 690 ft (210 m) from topographic map.

REMARKS.--Records good except those for periods of no gage height record and winter periods, which are fair.

EXTREMES FOR PERIOD OF RECORD.-- Maximum discharge, 4,280 ft³/s (121 m³/s) Feb. 27, 1962, gage height, 8.0 ft (2.438 m); minimum recorded discharge, 0.1 ft³/s (0.003 m³/s) Sept. 8, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 862 ft³/s (24.4 m³/s) May 5, no peak above base of 1,150 ft³/s (32.5 m³/s), gage height, 5.52 ft (1.682 m); minimum, 0.12 ft³/s (0.003 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.99	1.4	.58	.34	.20	150	43	47	1.7	127	.28	.41
2	.72	1.6	.56	.33	.20	97	116	43	1.8	67	.21	.35
3	.54	1.6	.54	.33	.20	62	259	81	1.8	22	.17	.33
4	.41	1.5	.52	.32	.20	171	118	291	1.7	10	.13	.33
5	.26	1.4	.50	.31	.20	389	81	685	2.3	14	.28	.33
6	.33	1.3	.48	.30	.20	164	50	212	2.7	11	.41	.33
7	.33	1.2	.47	.30	.20	97	41	103	2.3	5.5	.43	.38
8	.31	1.1	.45	.29	.20	67	41	60	1.8	3.5	.62	.50
9	.54	.99	.44	.28	.20	63	31	38	2.4	4.9	.82	.82
10	.87	.87	.42	.27	.20	60	26	27	2.7	3.7	1.2	.67
11	.87	.77	.41	.27	.20	44	22	20	2.3	2.3	1.7	.47
12	.87	.93	.40	.26	.20	46	18	17	2.3	3.2	3.5	.38
13	.72	.82	.38	.26	.42	252	16	14	2.3	10	13	.87
14	.62	.82	.37	.25	.80	138	15	13	2.2	4.3	10	2.8
15	.58	.82	.36	.24	1.5	74	13	11	1.8	2.6	4.9	13
16	.50	.77	.36	.24	42	46	11	9.4	1.4	1.6	2.7	11
17	.47	.77	.36	.23	41	30	10	8.0	1.6	1.4	1.7	92
18	.47	.72	.36	.23	39	277	9.4	7.2	1.4	1.1	1.1	101
19	.43	.72	.37	.22	34	532	9.1	6.2	1.2	.99	.87	47
20	.62	.72	.37	.22	30	208	8.4	4.9	.93	.99	.72	46
21	.67	.72	.38	.22	24	157	8.0	4.3	.82	1.2	.72	29
22	.72	.72	.39	.22	18	141	8.8	3.7	.72	4.1	.82	16
23	.72	.67	.39	.21	20	242	180	3.7	.67	5.8	3.5	9.7
24	.99	.67	.39	.21	267	316	229	3.5	.58	3.0	4.7	6.5
25	1.1	.67	.39	.21	304	169	227	3.3	.82	2.0	3.7	4.5
26	1.1	.67	.39	.20	178	124	262	3.0	.99	1.4	2.2	3.7
27	1.1	.72	.38	.20	242	95	191	2.7	1.9	.87	1.4	3.0
28	1.1	.77	.38	.20	324	313	100	2.4	1.7	.67	.93	2.6
29	1.1	.72	.37	.20	---	409	89	2.3	1.5	.54	.72	2.3
30	1.1	.62	.36	.20	---	157	66	2.0	3.0	.43	.67	1.9
31	1.4	---	.35	.20	---	77	---	1.8	---	.35	.50	---
TOTAL	22.55	27.[illegible]	12.87	7.76	1560.12	5167	2298.7	1730.4	51.33	317.44	64.60	398.17
MEAN	.73	.[illegible]	.42	.25	56.0	167	76.6	55.8	1.71	10.2	2.08	13.3
MAX	1.4	1.6	.58	.34	324	532	262	685	3.0	127	13	101
MIN	.26	.62	.35	.20	.20	30	8.0	1.8	.58	.35	.13	.33
CFSM	.01	.01	.006	.004	.85	2.52	1.16	.84	.03	.15	.03	.20
IN.	.01	.02	.01	.00	.88	2.90	1.29	.97	.03	.18	.04	.22

WTR YR 1977 TOTAL 11666.71 MEAN 32.0 MAX 685 MIN .13 CFSM .48 IN 6.56

Note: No gage height record [illegible]n. 25 to Mar. 29.

04197300 WOLF CREEK AT BETTSVILLE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 24...	1245	316	470	7.8	3.0	12.4	92	1.9	210	110	59	15
JUN 21...	1400	.60	740	8.0	23.0	8.8	100	5.2	310	120	68	34

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 24...	9.5	2.4	117	0	96	3.0	62	32	.1	6.1	244	9.0
JUN 21...	26	3.2	234	0	192	3.7	100	51	.3	3.1	401	.25

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 24...	.03	.07	.15	1	<10	6	30	4	10	.0	40	8.4
JUN 21...	.03	.27	.40	4	<10	5	20	4	70	.0	30	8.4

04197450 EAST BRANCH WOLF CREEK NEAR BETTSVILLE, OH

LOCATION.--Lat 41°15'40", long 83°11'04", in SW 1/4 sec. 31, T.4N., R.15E., Sandusky County, Hydrologic Unit 04100011, on right bank at downstream side of bridge on Gilmore Road, 2.7 mi (4.3 km) northeast of Bettsville, 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--82.4 mi² (213 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 660.00 ft (201.168 m) above mean sea level (Sandusky County bench mark).

REMARKS.--Records good except those for periods of no gage height record and winter periods, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,850 ft³/s (60.7 m³/s) Feb. 17, 1976, gage height, 8.24 ft (2.512 m); minimum discharge, 0.12 ft³/s (0.003 m³/s) Aug. 4, 5, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,300 ft³/s (36.8 m³/s) and maximums (*) during period February to September 1976:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 24	2300	*2570	72.8	*7.97	2.429	May 5	0900	1820	51.5	7.15	2.179
Sept. 17	1500	1420	40.2	6.65	2.027						

Minimum discharge, 0.12 ft³/s (0.003 m³/s) Aug. 4, 5

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	3.6	2.1	1.2	1.2	480	270	265	2.3	522	.36	2.3
2	3.7	3.3	2.0	1.2	1.2	400	417	249	2.3	179	.32	1.9
3	3.7	2.8	1.9	1.2	1.2	340	1050	320	1.9	37	.28	1.7
4	3.7	2.3	1.8	1.2	1.2	760	617	764	1.7	22	.21	1.1
5	1.4	1.9	1.7	1.3	1.2	1000	430	1630	2.6	90	.21	.96
6	1.1	1.7	1.7	1.3	1.2	470	339	806	3.9	31	.32	.96
7	1.1	1.5	1.7	1.3	1.2	340	284	502	4.0	14	1.7	.96
8	.96	1.4	1.6	1.3	1.2	220	288	305	4.8	8.1	3.7	1.5
9	1.1	1.3	1.6	1.3	1.2	160	252	174	6.0	7.0	6.0	1.7
10	1.4	1.2	1.5	1.3	1.2	125	225	102	6.0	7.4	11	1.5
11	1.3	1.1	1.5	1.3	1.2	110	202	67	6.4	7.0	11	1.4
12	1.1	1.4	1.5	1.3	1.2	390	179	41	7.4	3.7	83	2.8
13	1.0	1.4	1.5	1.3	1.4	660	162	31	6.4	6.7	302	3.5
14	.90	1.3	1.4	1.3	3.0	270	155	25	5.1	136	61	13
15	.82	1.3	1.4	1.3	6.0	160	148	18	4.5	4.8	19	213
16	.77	1.2	1.4	1.3	110	90	134	14	3.7	3.1	12	134
17	.72	1.2	1.4	1.3	105	250	126	12	3.5	3.5	8.5	1260
18	.68	1.1	1.3	1.3	94	1100	121	10	3.1	4.5	6.0	1020
19	.66	1.1	1.3	1.3	80	1350	117	9.2	2.3	3.5	5.1	602
20	.72	1.1	1.3	1.3	72	480	113	8.1	2.1	1.5	4.5	735
21	.86	1.1	1.3	1.3	60	360	109	7.0	1.7	.96	4.8	309
22	1.4	1.1	1.3	1.3	50	560	113	6.7	1.4	1.1	5.5	126
23	1.7	1.1	1.3	1.3	900	800	320	6.0	.86	1.1	8.8	58
24	2.8	1.1	1.2	1.3	2100	580	507	12	.86	.86	13	29
25	3.7	1.1	1.2	1.3	1960	410	477	9.6	3.7	1.9	14	20
26	3.7	1.5	1.2	1.3	980	340	553	6.8	2.1	1.9	10	14
27	3.7	1.9	1.2	1.2	1410	600	607	5.7	1.2	1.9	7.4	10
28	3.7	2.5	1.2	1.2	2200	1050	404	5.7	.96	1.2	5.1	8.1
29	3.7	2.7	1.2	1.2	---	680	350	4.5	1.1	.76	4.5	7.0
30	3.7	2.3	1.2	1.2	---	500	316	3.7	9.6	.60	3.7	5.1
31	3.7	---	1.2	1.2	---	378	---	3.1	---	.47	2.8	---
TOTAL	63.39	49.6	45.1	39.4	10145.8	15413	9393	5422.3	104.28	1104.55	615.80	4585.48
MEAN	2.04	1.65	1.45	1.27	362	497	313	175	3.48	35.6	19.9	153
MAX	3.9	3.6	2.1	1.3	2200	1350	1050	1630	9.6	522	302	1260
MIN	.66	1.1	1.2	1.2	1.2	90	109	3.1	.86	.47	.21	.96
CFSM	.03	.02	.02	.02	4.39	6.03	3.80	2.12	.04	.43	.24	1.86
IN.	.03	.02	.02	.02	4.58	6.96	4.24	2.45	.05	.50	.28	2.07

WTR YR 1977 TOTAL 46981.70 MEAN 129 MAX 2200 MIN .21 CFSM 1.57 IN 21.21

Note: No gage height record Oct. 11 to Dec. 1 and Feb. 28 to Mar. 30.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 29...	1100	600	465	7.6	12.0	10.0	92	2.8	210	110	57	17
JUN 21...	1215	1.7	840	6.2	23.0	10.2	120	3.0	340	120	75	37

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 29...	7.8	3.2	127	0	104	5.1	56	24	.2	6.9	235	8.1
JUN 21...	36	4.3	265	0	217	2.7	110	72	.4	1.0	466	.06

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 29...	.06	.13	.38	4	10	8	30	6	30	.0	20	--
JUN 21...	.01	.12	.17	3	10	4	30	3	40	.0	30	6.7

04198000 SANDUSKY RIVER NEAR FREMONT, OH

LOCATION.--Lat 41°18'20", long 83°09'32", in sec. 17, T.4 N., R.15 E., Sandusky County, Hydrologic Unit 04100011, on left bank at downstream side of county road bridge, 2.3 mi (3.7 km) upstream from Ballville diversion dam, 2.5 mi (4.0 km) downstream from Wolf Creek, and 3.5 mi (5.6 km) southwest of Fremont.

DRAINAGE AREA.--1,251 mi² (3,240 km²).

PERIOD OF RECORD.--November 1898 to March 1901 (gage height and discharge measurements only, published at "at Fremont"), October 1923 to December 1935, July 1938 to current year. Monthly discharge only for October 1923, published in WSP 1307.

REVISED RECORDS.--WSP 744: 1931-32. WSP 874: 1938. WSP 1144: 1924-30. WSP 1387: 1925, 1928-29, 1931-35. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 626.3 ft (190.90 m) above mean sea level, adjustment of 1912. Nov. 18, 1898, to Mar. 10, 1901, nonrecording gage at site 4 mi (6 km) downstream at different datum. Nov. 8, 1923, to Sept. 5, 1930, nonrecording gage at present site and datum.

REMARKS.--Records good except for winter periods, which are fair. Water-quality data collected at this site 1950 to 1966.

AVERAGE DISCHARGE.--51 years (1923-35, 1938-77), 944 ft³/s (26.73 m³/s), 10.25 in/yr (260 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 28,000 ft³/s (793 m³/s) Feb. 10, 1959; maximum gage height, 15.20 ft (4.633 m) Feb. 10, 1959, from floodmark (ice jam); minimum discharge, 4.4 ft³/s (0.12 m³/s) Feb. 29, 1964 (result of freezeup); minimum gage height, 0.78 ft (0.238 m) Oct. 20, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 ft³/s (198 m³/s) and maximums(*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 24	0200	10200	289	6.04	1.841						
Feb. 25	0700	*17600	498	*8.40	2.560						

Minimum daily discharge, 44 ft³/s (1.25 m³/s) Oct. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	110	58	61	53	2390	1276	790	89	4400	74	63
2	115	102	55	58	54	1510	1190	705	70	2150	78	53
3	90	110	54	55	55	963	5420	786	67	1000	63	63
4	70	115	53	53	55	1100	6010	1700	63	650	60	110
5	60	110	52	52	53	2590	5690	4810	70	455	63	154
6	54	106	52	52	52	2370	4200	4160	82	700	82	129
7	60	102	52	52	51	1740	2580	2880	70	900	163	115
8	54	94	52	52	50	1130	1790	1680	67	660	229	90
9	51	86	52	52	48	803	1390	1030	90	540	197	70
10	57	82	52	52	48	683	1040	717	86	440	158	63
11	54	67	53	52	47	606	795	563	86	350	145	60
12	54	70	54	52	48	578	638	462	98	280	333	51
13	57	70	55	52	220	1080	542	395	106	220	578	67
14	51	67	58	52	800	1500	476	349	98	207	644	197
15	47	63	64	52	1140	1530	428	319	94	163	434	360
16	47	63	74	52	1440	1050	390	298	82	124	287	895
17	44	63	76	52	1340	718	348	283	74	110	197	2230
18	44	60	79	53	1270	1630	317	261	74	90	141	3010
19	44	60	81	56	1050	5580	293	252	197	70	119	2530
20	51	57	82	62	888	4840	278	255	145	74	94	3100
21	63	57	84	64	742	3690	293	228	106	70	90	2330
22	60	57	84	62	615	2920	314	206	74	74	129	1300
23	63	63	84	60	2510	4670	859	186	60	133	133	730
24	78	74	84	57	12800	4670	1770	174	54	597	218	491
25	98	70	83	55	15100	3080	2070	164	70	569	245	360
26	94	70	80	53	9490	1860	1930	171	70	340	192	241
27	98	62	78	51	9000	1270	1910	161	67	223	137	218
28	106	74	75	50	5690	1760	1450	136	57	108	106	182
29	110	62	72	50	---	3630	1170	114	57	133	86	154
30	110	80	68	51	---	2980	965	98	1000	106	94	137
31	115	---	64	52	---	2160	---	91	---	82	78	---
TOTAL	2240	2326	2064	1679	64609	67081	47835	24434	3423	16084	5647	19553
MEAN	72.3	77.5	66.6	54.2	2310	2164	1595	788	114	519	182	652
MAX	141	115	84	64	15100	5580	6010	4810	1000	4400	644	3100
MIN	44	57	52	50	47	578	278	91	54	70	60	51
CFSM	.06	.06	.05	.04	1.85	1.73	1.28	.63	.09	.42	.15	.52
IN.	.07	.07	.06	.05	1.92	1.99	1.42	.73	.10	.48	.17	.58

CAL YR 1976 TOTAL 281605 MEAN 769 MAX 14000 MIN 28 CFSM .62 IN 8.37
WTR YR 1977 TOTAL 257056 MEAN 704 MAX 15100 MIN 44 CFSM .56 IN 7.64

04198005 SANDUSKY RIVER BELOW FREMONT, OH

LOCATION.--Lat 41°22'12", long 83°06'10", in NW 1/4 sec. 26, T.5 N., R.15 E., Sandusky County, Hydrologic Unit 04100011, on left bank 0.3 mi (0.5 km) downstream from U.S. Highway 20 bridge, 0.7 mi (1.1 km) downstream from Fremont Sewage plant, 7.0 mi (11.3 km) downstream from discharge station near Fremont, and 4.0 mi (6.4 km) upstream from Muskellunge Creek.

DRAINAGE AREA.--1,264 mi² (3,274 km²).

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1966 to current year.
pH: September 1966 to current year.
WATER TEMPERATURES: September 1966 to current year.
DISSOLVED OXYGEN: September 1966 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations. See records of discharge for station near Fremont (station 04198000).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,500 micromhos Aug. 29, 30, 1974; minimum, 156 micromhos Apr. 26, 1972.
pH: Maximum, 11.5 units June 28, 1972; minimum, 4.8 units Apr. 26, 1970.
WATER TEMPERATURES: Maximum, 32.5°C Aug. 17, 1970; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during 1970-74, 1976-77; minimum, 0.0 mg/L Oct. 14, 1970, Nov. 1-5, 1974, Aug. 25, 1975.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,440 micromhos Jan. 13; minimum, 270 micromhos Feb. 26.
pH: Maximum, 9.3 units July 31; minimum, 7.3 units Nov. 25.
WATER TEMPERATURES: Maximum, 30.0°C July 20, 21; minimum, 0.0°C Jan. 12-16, Feb. 9-28, Mar. 1-3.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L Oct. 29, 30, Nov. 2-4, May 19, June 15, 16; minimum, 0.1 mg/L Aug. 11, 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
03...	1330	847	510	8.2	.5	13.4	93	4.3	220	120	61	17
JUN												
20...	1245	137	840	7.6	24.5	7.3	87	6.4	320	150	74	34

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
03...	15	5.1	128	0	105	1.3	79	38	.2	6.7	285	6.2
JUN												
20...	40	5.4	204	0	167	8.2	150	67	.4	1.0	472	.24

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
03...	.08	.40	.21	1	40	13	20	11	30	.0	30	8.0
JUN												
20...	.03	.20	.44	4	10	4	20	8	10	.1	20	6.8

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	807	789	977	927	1010	983	1220	1210	---	---	429	390
2	848	783	964	905	1050	1010	1220	1210	---	---	461	431
3	857	827	948	911	1090	1050	1240	1220	---	---	480	462
4	872	852	974	947	1110	1060	1280	1250	---	---	501	480
5	888	880	1010	975	1130	1080	1310	1280	---	---	501	465
6	887	876	1010	986	1130	1100	1320	1310	---	---	495	480
7	879	870	1020	990	1150	1120	1320	1320	---	---	516	492
8	887	870	1020	1020	1170	1140	1320	1300	---	---	525	510
9	891	882	1040	1020	1160	1120	1300	1290	1070	1070	540	510
10	903	870	1060	1020	1190	1150	1310	1290	1070	1060	554	540
11	900	891	1070	1040	1180	1140	1360	1320	1080	1070	582	555
12	905	890	1070	1060	1190	1170	1410	1360	1090	1080	615	582
13	888	878	1090	1080	1190	1170	1440	1400	1080	1040	675	581
14	882	869	1090	1080	1200	1180	1430	1370	1040	1020	687	630
15	869	858	1090	1070	1210	1190	1380	1290	1300	1040	678	615
16	870	840	1090	1080	1210	1200	1290	1240	1280	1170	675	626
17	878	870	1080	1070	1220	1190	---	---	1280	1060	692	621
18	882	870	1080	1070	1220	1200	---	---	1280	1050	686	602
19	893	885	1070	1050	1220	1210	---	---	1040	900	591	405
20	893	885	1070	1050	1220	1180	---	---	897	867	441	407
21	914	885	1060	1050	1200	1140	---	---	870	825	437	417
22	900	855	1070	1040	1140	1110	---	---	828	810	480	435
23	902	870	1040	1020	1120	1100	---	---	812	722	492	449
24	893	836	1050	1020	1130	1110	---	---	716	357	456	435
25	870	840	1040	1010	1150	1140	---	---	351	285	462	435
26	876	870	1040	998	1160	1150	---	---	302	270	492	464
27	897	870	1040	1020	1170	1160	---	---	336	300	522	480
28	915	898	1030	1000	1180	1140	---	---	387	332	557	522
29	908	898	1010	980	1190	1160	---	---	---	---	549	477
30	915	903	990	860	1190	1180	---	---	---	---	495	465
31	965	908	---	---	1210	1190	---	---	---	---	516	501
MONTH	965	783	1090	860	1220	983	1440	1210	1300	270	692	390

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	525	512	668	657	813	804	1000	783	552	516	614	596
2	546	510	675	647	816	809	1050	704	569	537	653	603
3	557	360	678	656	837	810	801	435	572	530	656	633
4	377	358	689	659	824	813	461	423	599	573	674	635
5	360	342	651	497	819	792	474	384	636	603	686	659
6	413	363	520	507	804	792	549	406	695	629	683	668
7	487	453	530	515	803	759	598	375	699	669	725	684
8	544	491	555	527	780	756	428	387	681	545	735	698
9	558	551	591	554	798	767	441	419	570	516	788	710
10	---	---	624	594	807	789	504	443	527	507	797	786
11	---	---	651	626	833	800	506	476	528	522	801	791
12	642	591	665	650	845	836	501	461	588	527	797	771
13	625	616	681	665	852	837	479	456	725	543	794	750
14	652	629	750	676	837	812	534	462	725	578	765	744
15	663	648	753	720	828	803	543	522	579	546	746	503
16	679	663	720	627	837	806	537	500	573	512	759	621
17	686	671	705	611	840	818	536	503	598	509	717	453
18	695	669	726	684	870	830	551	524	519	513	488	381
19	696	684	803	722	873	864	551	531	528	519	408	381
20	695	674	834	762	867	836	596	542	534	524	429	404
21	711	681	788	693	851	837	581	564	540	527	420	395
22	714	690	726	687	846	839	582	572	543	534	426	395
23	762	651	734	695	854	827	621	585	552	530	453	426
24	747	677	732	696	869	809	633	564	606	546	477	455
25	681	653	735	717	869	848	597	570	621	587	500	477
26	656	644	758	726	864	857	686	608	594	572	522	501
27	644	626	806	758	865	876	695	660	606	567	579	522
28	639	621	837	789	897	884	674	656	587	567	579	567
29	647	638	827	815	917	890	660	573	588	570	602	573
30	657	642	830	813	906	888	593	504	597	585	609	590
31	---	---	818	798	---	---	566	485	609	594	---	---
MONTH	762	342	837	497	917	756	1050	375	725	507	801	381
YEAR	1440	270										

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.6	8.1	8.7	8.4	8.4	8.2	8.3	8.2	---	---	8.0	7.8
2	8.8	7.9	8.8	8.5	8.6	8.5	8.5	8.3	---	---	8.1	7.9
3	8.6	8.3	8.9	8.7	8.5	8.4	8.5	8.4	---	---	8.3	8.1
4	8.5	8.1	8.9	8.7	8.6	8.5	8.5	8.4	---	---	8.4	8.2
5	8.3	8.0	8.7	8.7	8.7	8.5	8.4	8.3	---	---	8.3	8.2
6	8.0	7.6	8.7	8.5	9.0	8.7	8.4	8.2	---	---	8.3	8.2
7	7.6	7.4	8.7	8.5	9.0	8.9	8.4	8.2	---	---	8.4	8.2
8	7.8	7.6	8.6	8.5	9.1	8.8	8.3	8.2	---	---	8.4	8.2
9	7.7	7.6	8.6	8.5	9.0	8.8	8.3	8.3	7.9	7.8	8.5	8.4
10	7.7	7.5	8.5	8.5	9.0	8.8	8.3	8.2	7.8	7.8	8.5	8.4
11	7.8	7.6	8.5	8.4	9.1	8.9	8.2	8.1	7.8	7.7	8.5	8.4
12	7.9	7.7	8.5	8.4	9.1	8.9	8.2	8.0	7.8	7.8	8.6	8.5
13	8.0	7.8	8.5	8.3	9.1	8.9	8.2	8.0	8.0	7.8	8.5	8.4
14	8.0	7.7	8.3	8.2	9.1	8.8	8.4	8.2	8.0	7.9	8.5	8.4
15	8.1	7.9	8.3	7.9	9.1	9.0	8.4	8.2	8.0	7.7	8.5	8.4
16	8.0	7.8	8.2	8.0	9.1	9.0	8.2	7.8	8.0	7.7	8.5	8.4
17	7.9	7.8	8.2	8.0	8.4	8.2	---	---	7.9	7.7	8.5	8.2
18	8.0	7.6	8.2	8.0	8.5	8.4	---	---	8.0	7.7	8.4	8.3
19	8.0	7.8	8.1	7.8	8.5	8.4	---	---	8.1	8.0	8.2	8.1
20	7.9	7.7	8.2	8.0	8.5	8.4	---	---	8.1	7.8	8.2	8.1
21	8.2	8.0	8.2	8.1	8.5	8.2	---	---	8.0	7.8	8.3	8.1
22	8.2	8.0	8.1	8.0	8.2	8.2	---	---	8.0	7.8	8.4	8.1
23	8.2	8.0	8.0	7.8	8.2	8.1	---	---	8.1	7.9	8.3	8.2
24	8.1	7.9	8.0	7.6	8.4	8.1	---	---	8.1	7.8	8.2	8.1
25	8.0	7.9	7.8	7.3	8.4	8.2	---	---	8.0	7.8	8.3	8.1
26	8.3	8.0	7.6	7.4	8.4	8.3	---	---	8.0	8.0	8.4	8.2
27	8.3	8.2	7.9	7.5	8.4	8.2	---	---	8.0	7.8	8.5	8.1
28	8.7	8.3	8.0	7.8	8.5	8.2	---	---	7.8	7.7	8.5	8.5
29	8.8	8.7	8.1	7.7	8.2	8.1	---	---	---	---	8.5	8.4
30	8.8	8.8	8.2	7.6	8.3	8.2	---	---	---	---	8.5	8.2
31	8.8	8.7	---	---	8.2	8.2	---	---	---	---	8.4	8.2
MONTH	8.8	7.4	8.9	7.3	9.1	8.1	8.5	7.8	8.1	7.7	8.6	7.8

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.5	8.3	8.2	8.1	8.1	7.6	8.0	7.4	9.0	8.3	8.2	7.7
2	8.5	8.4	8.3	8.0	7.7	7.5	8.1	7.8	9.0	8.2	7.9	7.6
3	8.5	8.2	8.4	8.0	8.1	7.5	8.0	7.6	8.8	8.0	7.9	7.6
4	8.2	8.1	8.1	7.9	8.4	7.7	7.7	7.6	8.4	7.8	8.1	7.6
5	8.2	8.1	7.9	7.7	8.6	8.0	7.6	7.5	8.2	7.7	8.2	7.6
6	8.1	8.0	7.8	7.7	8.4	7.7	7.9	7.6	8.1	7.6	8.5	7.8
7	8.2	8.1	7.8	7.7	7.7	7.5	7.9	7.7	7.8	7.6	8.2	7.7
8	8.3	8.1	7.8	7.7	7.7	7.4	7.7	7.6	7.8	7.6	8.9	7.8
9	8.2	8.1	7.9	7.7	7.7	7.4	7.9	7.6	7.9	7.5	8.8	8.5
10	---	---	8.0	7.7	7.9	7.6	8.0	7.6	7.9	7.5	8.6	7.8
11	---	---	8.1	7.9	8.4	7.8	8.1	7.6	8.4	7.5	8.0	7.7
12	8.5	8.4	8.2	7.9	8.4	7.9	7.8	7.5	7.8	7.5	8.3	7.8
13	8.5	8.3	8.3	8.0	8.5	7.7	7.7	7.5	8.1	7.7	7.9	7.8
14	8.7	8.2	8.5	8.1	8.9	8.3	7.9	7.5	8.1	7.8	7.9	7.8
15	8.6	8.2	8.7	8.2	9.1	8.7	7.9	7.5	8.2	7.5	7.9	7.5
16	---	---	8.7	8.3	9.0	8.1	8.9	7.6	8.3	7.5	8.4	7.9
17	---	---	8.5	8.3	8.4	8.0	8.8	7.7	7.8	7.5	8.2	7.9
18	---	---	8.5	8.2	8.3	7.8	9.0	7.9	7.7	7.5	8.0	7.9
19	---	---	8.5	8.3	8.1	7.7	8.7	7.6	7.9	7.5	8.0	7.9
20	---	---	8.4	7.9	8.0	7.6	8.3	7.7	8.1	7.5	8.0	7.9
21	---	---	8.5	7.9	8.5	7.6	8.7	8.0	8.1	7.6	8.0	7.9
22	8.6	8.1	8.5	8.0	8.5	8.2	8.6	8.0	8.1	7.5	8.0	7.9
23	8.1	7.7	8.3	7.6	8.6	8.0	8.1	7.8	8.9	7.5	8.0	7.9
24	8.1	7.9	8.2	7.6	8.8	7.7	8.9	7.8	9.0	7.6	8.0	7.9
25	8.0	7.9	8.5	7.8	8.7	7.7	8.9	8.3	8.9	8.3	8.0	7.9
26	7.9	7.8	8.3	7.9	8.5	8.2	9.0	8.2	9.1	8.3	8.1	8.0
27	8.1	7.8	8.1	7.6	8.6	8.0	8.9	8.0	8.9	8.3	8.1	7.9
28	8.0	7.9	8.3	7.8	8.5	7.9	9.0	8.4	9.0	8.5	8.2	8.0
29	8.1	7.8	8.1	7.8	8.4	7.8	8.7	8.0	8.8	8.4	8.4	8.1
30	8.1	7.9	8.1	7.7	8.0	7.7	9.0	8.1	8.4	7.8	8.5	8.2
31	---	---	8.4	7.8	---	---	9.3	8.5	8.0	7.7	---	---
MONTH	8.7	7.7	8.7	7.6	9.1	7.4	9.3	7.4	9.1	7.5	8.9	7.5
YEAR	9.3	7.3										

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	15.5	7.0	6.5	1.5	1.0	1.5	1.5	---	---	0.5	0.0
2	17.0	15.5	7.0	6.0	1.0	1.0	1.5	1.5	---	---	0.5	0.0
3	17.5	16.5	7.0	6.5	1.0	0.5	1.5	1.5	---	---	1.0	0.0
4	18.0	17.0	7.0	6.5	1.5	1.0	1.5	1.5	---	---	1.5	1.0
5	18.0	17.0	7.0	6.5	1.5	1.0	1.5	1.5	---	---	1.5	1.0
6	18.0	17.0	6.5	6.0	1.5	1.0	1.5	1.5	---	---	2.5	1.0
7	16.5	16.0	6.5	6.0	2.0	1.5	1.5	1.5	---	---	3.0	2.0
8	16.0	15.5	6.0	5.5	2.0	1.5	1.0	1.0	---	---	4.0	2.0
9	15.5	14.5	5.5	5.0	2.0	1.0	1.0	1.0	0.0	0.0	5.0	3.0
10	14.5	13.5	5.5	5.0	2.0	2.0	1.0	0.5	0.0	0.0	6.0	5.0
11	14.5	14.0	5.5	5.0	2.5	1.5	1.0	0.5	0.0	0.0	7.5	5.5
12	14.5	13.5	5.5	4.0	2.5	2.0	1.0	0.0	0.0	0.0	8.0	6.0
13	14.5	13.5	4.5	3.5	2.5	2.0	0.0	0.0	0.0	0.0	7.5	7.0
14	13.5	13.0	4.0	3.0	2.5	2.0	0.0	0.0	0.0	0.0	7.0	6.5
15	14.0	13.0	4.0	3.5	2.5	2.0	0.0	0.0	0.0	0.0	8.5	6.5
16	13.0	12.5	4.0	3.5	3.0	2.5	0.0	0.0	0.0	0.0	8.5	7.0
17	12.5	12.0	4.0	3.0	3.0	3.0	---	---	0.0	0.0	7.5	7.0
18	12.0	11.5	4.0	3.5	3.0	3.0	---	---	0.0	0.0	7.0	4.5
19	11.5	11.0	4.5	3.5	3.5	3.0	---	---	0.0	0.0	4.0	3.0
20	11.0	10.0	4.0	3.5	3.0	3.0	---	---	0.0	0.0	3.5	3.5
21	10.0	9.0	4.0	3.5	3.0	2.5	---	---	0.0	0.0	4.5	3.0
22	8.5	8.0	4.0	3.0	3.0	2.5	---	---	0.0	0.0	4.0	3.0
23	8.5	8.0	3.0	2.0	3.0	2.0	---	---	0.5	0.0	4.0	3.0
24	8.0	7.5	2.5	2.0	3.0	2.5	---	---	0.5	0.0	3.5	2.5
25	8.0	7.5	2.5	2.0	2.5	2.5	---	---	0.5	0.0	4.0	3.0
26	7.5	7.5	3.0	2.5	2.5	2.5	---	---	0.5	0.0	5.0	3.5
27	7.5	7.0	4.0	3.0	2.5	2.5	---	---	0.0	0.0	6.0	4.0
28	7.5	6.0	4.0	3.5	2.5	1.5	---	---	0.0	0.0	7.5	6.0
29	6.5	5.5	3.5	1.5	2.0	1.5	---	---	---	---	9.0	7.0
30	6.5	6.0	1.5	1.0	2.0	1.5	---	---	---	---	10.5	9.0
31	6.5	6.0	---	---	1.5	1.5	---	---	---	---	9.5	8.5
MONTH	18.0	5.5	7.0	1.0	3.5	0.5	1.5	0.0	0.5	0.0	10.5	0.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.5	8.0	16.0	15.0	24.0	22.0	24.5	23.5	26.5	25.0	26.5	25.0
2	10.5	8.0	17.0	15.0	22.0	21.0	25.0	22.0	26.5	25.0	27.0	25.5
3	9.5	8.5	16.5	15.5	22.0	20.0	23.5	21.5	26.0	25.0	26.5	25.5
4	8.5	8.0	16.0	15.5	22.0	20.5	23.5	21.5	26.5	25.0	26.0	25.0
5	8.0	7.0	17.0	15.0	22.0	21.0	25.0	22.5	26.5	25.0	26.5	25.0
6	8.5	6.0	17.5	17.0	21.5	20.0	28.0	25.0	26.0	25.5	26.0	25.0
7	8.0	7.5	18.0	17.0	20.0	19.0	28.5	26.0	26.0	25.5	25.5	24.5
8	7.5	6.5	18.0	16.5	20.0	19.0	28.5	26.0	26.5	25.5	26.0	24.5
9	7.5	6.5	17.0	15.0	19.5	18.5	28.5	27.0	26.0	25.0	25.5	24.5
10	---	---	16.0	15.0	21.0	19.0	28.5	26.5	26.0	25.5	25.0	24.0
11	---	---	17.0	15.0	21.0	20.0	27.5	25.5	27.0	25.0	24.5	23.0
12	14.0	12.5	17.0	16.0	20.0	19.5	26.5	25.5	25.5	25.0	23.5	22.5
13	15.5	13.5	18.5	16.5	20.5	19.0	27.5	26.0	26.0	24.0	22.5	21.5
14	15.5	14.5	19.5	18.0	22.5	20.5	28.0	26.5	25.5	23.5	21.5	20.5
15	16.0	14.0	19.5	18.5	24.0	21.5	28.0	26.5	26.0	24.0	21.0	19.0
16	16.0	15.0	20.0	18.5	23.5	22.0	29.5	27.5	26.0	24.0	19.5	18.5
17	15.5	15.0	21.0	19.0	24.0	22.0	29.0	27.5	25.0	24.0	20.5	19.0
18	16.0	14.5	22.0	20.5	25.0	23.5	29.5	28.0	24.0	23.5	20.5	19.5
19	16.5	15.5	25.5	21.5	24.5	23.0	29.0	27.5	24.0	22.5	21.0	20.0
20	17.5	16.5	25.0	24.0	25.0	24.0	30.0	28.0	23.0	22.0	20.5	19.5
21	18.0	16.5	26.5	24.5	25.0	23.5	30.0	29.5	23.0	22.0	19.0	18.5
22	19.0	17.5	25.5	24.5	24.5	24.0	29.5	28.5	22.5	21.5	19.0	18.0
23	18.0	16.0	25.0	24.0	24.5	24.0	28.0	27.5	22.5	21.5	19.0	18.0
24	16.0	14.5	25.0	23.5	24.5	23.5	28.5	26.0	23.5	21.5	20.0	19.0
25	14.5	14.0	26.5	24.5	25.0	23.5	27.0	26.0	23.0	21.5	20.0	19.0
26	14.5	13.0	26.5	25.0	25.5	25.0	26.5	25.0	22.0	21.5	20.5	20.0
27	15.5	13.0	26.0	25.0	26.5	25.5	26.0	25.0	24.0	21.5	20.0	19.5
28	15.0	14.0	26.5	24.5	27.0	25.5	25.0	24.5	26.0	24.0	20.0	19.0
29	14.5	12.5	25.5	24.5	26.5	25.5	25.5	24.5	25.5	24.5	19.0	18.5
30	15.0	13.5	25.0	24.0	25.5	25.0	26.5	24.5	25.0	24.0	19.0	18.0
31	---	---	24.5	23.5	---	---	27.0	25.0	25.5	24.5	---	---
MONTH	19.0	6.0	26.5	15.0	27.0	18.5	30.0	21.5	27.0	21.5	27.0	18.0
YEAR	30.0	0.0										

04198005 SANDUSKY RIVER BELOW FREMONT, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	9.7	6.2	14.7	13.4	10.9	10.2	9.7	9.0	---	---	14.0	13.3
2	11.9	4.3	15.0	13.3	10.3	9.5	9.2	8.4	---	---	13.9	13.3
3	11.5	8.4	15.0	15.0	10.3	9.3	8.8	8.2	---	---	14.0	13.4
4	13.0	7.7	15.0	14.3	10.3	9.4	9.0	8.2	---	---	14.0	13.5
5	12.2	9.3	14.4	13.0	10.7	9.3	9.3	8.1	---	---	13.8	13.3
6	9.7	6.3	14.3	13.1	12.0	10.1	9.4	8.5	---	---	13.3	13.0
7	6.3	3.6	14.6	13.2	11.2	9.9	9.6	8.9	---	---	13.3	12.6
8	4.8	3.6	14.6	12.9	11.8	10.1	9.8	9.0	---	---	13.3	12.4
9	4.0	3.3	13.9	13.2	12.9	9.1	10.2	9.0	11.2	10.7	12.3	11.9
10	4.8	3.4	13.5	12.6	10.9	8.8	10.7	8.7	11.1	10.4	12.2	11.3
11	5.0	3.7	13.1	12.4	11.3	9.0	11.1	10.2	11.1	9.8	12.0	11.0
12	6.8	4.9	13.8	12.2	11.3	9.1	11.0	10.1	11.2	10.4	11.7	10.8
13	8.0	5.9	14.2	13.1	11.1	9.4	11.0	10.2	11.8	11.0	11.0	10.5
14	7.7	6.4	13.2	12.5	11.3	9.7	11.8	10.5	12.2	11.0	11.3	10.7
15	8.3	7.4	12.9	12.2	11.3	10.1	12.6	10.8	12.1	11.1	12.3	10.9
16	8.8	7.3	12.8	11.9	10.2	9.7	12.8	12.2	13.6	11.8	12.0	10.4
17	8.4	6.5	12.7	12.1	11.2	10.2	---	---	13.7	12.1	10.8	10.0
18	8.3	6.8	12.6	11.8	10.7	9.8	---	---	13.1	12.3	11.5	9.9
19	9.0	7.6	12.4	11.6	9.9	9.2	---	---	13.0	12.2	11.9	11.5
20	8.7	7.8	12.3	11.7	10.3	9.0	---	---	13.2	12.1	12.0	11.8
21	10.9	8.9	11.9	11.0	10.9	9.5	---	---	13.2	12.3	12.1	11.8
22	11.0	10.2	11.0	9.2	10.9	8.8	---	---	13.1	11.8	11.9	11.6
23	11.3	10.3	11.4	10.2	9.4	8.6	---	---	12.7	11.2	12.1	11.9
24	11.0	9.8	11.4	10.1	9.8	8.8	---	---	13.2	11.8	12.3	12.1
25	10.3	8.9	10.9	9.9	10.2	9.3	---	---	13.8	13.2	12.1	11.7
26	10.7	8.8	12.3	10.1	11.2	9.7	---	---	14.0	13.7	11.8	11.1
27	11.6	10.4	12.3	11.3	11.3	10.5	---	---	14.3	13.7	11.1	10.3
28	14.6	11.1	11.9	10.6	11.5	10.3	---	---	14.4	13.8	10.3	9.1
29	15.0	13.6	10.6	10.2	11.0	10.4	---	---	---	---	10.1	8.9
30	15.0	14.6	11.2	10.9	10.3	9.2	---	---	---	---	9.9	9.0
31	14.4	13.6	---	---	10.0	9.2	---	---	---	---	9.4	9.1
MONTH	15.0	3.3	15.0	9.2	12.9	8.6	12.8	8.1	14.4	9.8	14.0	8.9

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.7	9.2	10.5	9.0	---	---	5.4	1.8	9.4	5.0	5.9	1.3
2	9.5	8.9	10.4	7.3	4.9	3.0	7.2	4.4	9.4	5.0	4.2	0.9
3	10.3	9.0	9.0	7.7	7.3	1.7	5.9	5.6	8.8	3.5	3.8	0.9
4	10.3	9.8	9.5	7.7	9.7	5.3	5.8	5.2	6.3	2.5	6.5	1.1
5	10.1	9.7	9.5	8.8	11.7	7.0	5.6	4.6	5.8	1.7	7.1	0.7
6	10.3	10.0	8.7	7.6	9.3	4.8	5.5	4.3	5.1	1.3	9.5	3.6
7	10.4	10.2	8.3	7.4	4.7	2.7	5.3	4.7	2.9	0.9	7.2	2.8
8	10.7	10.2	8.5	8.2	5.3	2.9	5.0	4.6	4.0	0.5	11.0	3.8
9	10.6	10.2	8.9	8.1	4.6	2.3	5.4	3.9	4.7	0.3	9.6	6.8
10	---	---	8.7	7.8	6.8	4.6	5.7	4.4	4.3	0.2	6.8	2.5
11	---	---	8.5	7.2	11.0	5.4	6.2	4.0	6.5	0.1	3.9	1.8
12	---	---	8.3	7.0	10.5	6.7	5.3	3.0	3.2	0.1	5.9	2.1
13	---	---	9.0	7.2	10.5	4.6	4.7	3.0	5.1	1.9	3.5	1.8
14	---	---	10.3	8.3	13.0	9.3	5.4	2.8	6.4	4.3	2.9	1.1
15	---	---	12.6	8.3	15.0	10.5	5.2	2.5	6.2	1.7	4.6	0.5
16	---	---	14.0	10.6	15.0	6.9	9.9	2.6	7.1	1.1	8.1	4.7
17	---	---	14.9	10.6	8.7	6.0	8.2	2.8	3.0	0.6	7.1	6.1
18	---	---	11.0	8.4	8.1	4.5	9.9	3.6	3.3	0.3	6.7	6.1
19	---	---	15.0	7.7	6.4	4.3	7.0	1.6	5.8	1.1	7.1	6.5
20	---	---	13.1	7.0	7.3	3.5	5.6	1.9	6.7	0.3	6.9	6.0
21	---	---	---	---	9.7	3.6	6.6	3.3	7.0	2.7	7.6	6.8
22	---	---	---	---	11.1	7.4	5.7	2.7	6.2	0.4	9.9	6.9
23	---	---	---	---	12.3	6.1	4.6	2.1	11.5	0.5	8.8	8.3
24	9.8	8.4	---	---	14.0	3.8	10.3	2.9	11.0	0.2	8.4	7.1
25	9.5	9.0	---	---	9.7	2.7	9.9	3.2	10.4	5.1	7.3	6.3
26	9.8	9.2	---	---	8.8	6.3	10.9	4.1	14.1	5.8	7.7	6.2
27	10.0	9.3	---	---	8.1	4.7	10.7	3.6	11.7	7.4	7.6	5.4
28	9.7	8.9	---	---	8.4	3.4	10.5	6.1	11.3	7.2	8.4	5.5
29	10.2	9.2	---	---	7.3	2.6	10.8	4.4	9.2	6.1	10.0	7.0
30	10.5	8.5	---	---	4.8	2.4	12.3	5.4	6.6	1.7	9.5	7.8
31	---	---	---	---	---	---	12.5	6.6	3.5	0.8	---	---
MONTH	10.7	8.4	15.0	7.0	15.0	1.7	12.5	1.6	14.1	0.1	11.0	0.5
YEAR	15.0	0.1										

04199000 HURON RIVER AT MILAN, OH

LOCATION.--Lat 41°18'06", long 82°36'25", in SW 1/4 sec. 4, T.5 N., R.22 W., Erie County, Hydrologic Unit 04100012, on right bank 500 ft (152 m) downstream from bridge on U.S. Highway 250, 0.2 mi (0.3 km) northwest of Milan and 2.0 mi (3.2 km) downstream from confluence of East and West Branches.

DRAINAGE AREA.--371 mi² (961 km²).

PERIOD OF RECORD.--March 1950 to current year.

REVISED RECORDS.--WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 573.26 ft (174.730 m) above mean sea level. Prior to July 29, 1953, nonrecording gage at site of former highway bridge 45 ft (14 m) upstream at same datum.

REMARKS.--Records fair except those for winter periods, which are poor. Water-quality data collected at this site 1969 to 1974.

AVERAGE DISCHARGE.--27 years, 295 ft³/s (8.345 m³/s), 10.80 in/yr (274 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,600 ft³/s (1,400 m³/s) July 5, 1969, gage height, 31.1 ft (9.48 m) (from floodmark), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 2.2 ft³/s (0.062 m³/s) Sept. 10, 15, 19, 20, 21, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 4,700 ft³/s (133 m³/s) and maximums (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft³/s)	(m³/s)	(ft)	(m)			(ft³/s)	(m³/s)	(ft)	(m)
Feb. 24	1500	5470	155	15.97	4.868	July 5	0100	*9480	268	*19.27	5.873
July 1	0500	4850	137	15.28	4.657						

Minimum daily discharge, 19 ft³/s (0.54 m³/s) Feb. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	98	37	30	24	488	361	227	33	3830	43	30
2	52	109	39	29	24	344	848	221	31	936	41	29
3	42	103	36	29	23	286	3240	327	31	366	34	27
4	37	85	33	29	23	576	1350	944	28	1350	31	24
5	30	65	32	29	23	1230	781	1630	164	7120	106	25
6	31	65	31	28	22	585	665	735	475	1210	76	25
7	32	53	30	28	22	399	499	442	264	515	312	35
8	27	45	29	28	22	302	419	302	120	769	199	32
9	39	39	28	28	21	276	344	229	208	480	125	28
10	60	38	28	28	21	274	289	183	183	276	88	24
11	70	37	27	28	21	250	243	155	112	264	92	21
12	59	45	27	28	21	245	197	131	80	919	1090	22
13	47	42	28	28	20	625	168	115	66	412	553	33
14	40	41	29	28	20	607	155	103	54	229	286	127
15	38	39	29	26	19	397	134	85	44	140	284	208
16	36	29	29	28	130	299	124	74	36	141	160	201
17	34	28	29	27	325	225	119	67	112	191	114	769
18	30	28	28	27	322	1960	112	61	349	252	104	561
19	29	28	30	27	292	3110	107	56	125	927	90	818
20	44	29	42	27	243	1170	114	49	67	289	66	1600
21	61	30	54	27	199	957	132	43	43	245	74	470
22	65	31	57	26	160	1900	168	38	32	414	129	264
23	63	36	43	26	566	2680	460	39	28	177	107	177
24	68	40	34	26	4000	1380	757	39	24	120	93	134
25	86	40	32	26	3830	706	507	39	95	195	66	109
26	127	39	31	25	1220	494	499	39	79	114	53	89
27	104	37	31	25	1330	397	496	35	66	76	45	63
28	82	35	30	25	943	1030	344	32	71	61	40	59
29	66	35	30	25	---	2160	342	30	628	54	35	54
30	59	36	30	24	---	878	307	29	650	66	33	51
31	75	---	30	24	---	488	---	29	---	49	34	---
TOTAL	1699	1405	1023	841	13886	26718	14281	6528	4298	22187	4603	6109
MEAN	54.8	46.8	33.0	27.1	496	862	476	211	143	716	148	204
MAX	127	109	57	30	4000	3110	3240	1630	650	7120	1090	1600
MIN	27	28	27	24	19	225	107	29	24	49	31	21
CFSM	.15	.13	.09	.07	1.34	2.32	1.28	.57	.39	1.93	.40	.55
IN.	.17	.14	.10	.08	1.39	2.68	1.43	.65	.43	2.22	.46	.61

CAL YR 1976 TOTAL 99655 MEAN 272 MAX 9350 MIN 11 CFSM .73 IN 9.99
WTR YR 1977 TOTAL 103578 MEAN 284 MAX 7120 MIN 19 CFSM .77 IN 10.39

04199100 HURON RIVER BELOW MILAN, OH

LOCATION.--Lat 41°20'06", long 82°34'38", in SW 1/4 sec. 2, T.5 N., R.22 W., Erie County, Hydrologic Unit 04100012, on right bank at downstream side of bridge on Mason Road, 3.5 mi (5.6 km) northeast of Milan, and 4.2 mi (6.8 km) downstream from the discharge station at Milan.

DRAINAGE AREA.--385 mi² (997 km²).

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to current year.
pH: June 1968 to current year.
WATER TEMPERATURES: June 1968 to current year.
DISSOLVED OXYGEN: June 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations. See records of daily discharge for station at Milan (station 04199000).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,340 micromhos Feb. 13, 1977; minimum, 141 micromhos Jan. 26, 1976.
pH: Maximum, 9.7 units June 6, 1976; minimum, 4.3 units Dec. 10, 1971.
WATER TEMPERATURES: Maximum, 30.0°C July 23, 1972; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on several days during 1971-77; minimum, 1.6 mg/L Nov. 4, 1974.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,340 micromhos Feb. 13; minimum, 147 micromhos July 5.
pH: Maximum, 9.1 units June 25; minimum, 7.1 units Feb. 10.
WATER TEMPERATURES: Maximum, 29.0°C July 16; minimum, 0.0°C Dec. 29-31, Jan. 1-7.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L on many days during December and May to September; minimum, 4.5 mg/L June 29, Aug. 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
01...	1630	452	580	7.9	3.0	12.4	92	2.8	250	150	70	19
JUN												
16...	1045	35	750	8.4	23.5	10.8	120	3.5	320	150	87	24

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
01...	16	4.7	126	0	103	2.5	119	40	.2	7.4	330	6.4
JUN												
16...	25	4.0	194	2	162	1.3	130	44	.2	3.3	415	5.3

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
01...	.06	.34	.13	2	10	12	60	5	80	.0	20	2.4
JUN												
16...	.14	.12	.27	3	10	7	30	5	20	.0	40	7.1

04199000 HURON RIVER BELOW MILAN, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	651	633	840	801	942	915	1070	1070	---	---	612	564
2	663	645	804	765	990	896	1070	1050	1040	984	651	615
3	687	666	795	768	---	---	1060	1040	990	975	663	645
4	702	684	828	795	---	---	1060	1040	981	960	696	591
5	714	702	840	819	---	---	1050	1020	978	960	579	462
6	741	711	837	813	1020	999	1060	1030	981	963	540	480
7	750	735	831	813	1010	995	1070	1050	990	981	582	540
8	771	756	825	819	1060	1010	---	---	1000	984	624	588
9	825	771	---	---	1040	1010	---	---	990	960	687	630
10	834	822	789	777	1060	1030	---	---	990	960	693	672
11	840	783	816	783	1070	1040	---	---	1210	990	726	690
12	789	744	840	816	1050	998	---	---	1330	1080	732	711
13	777	747	849	816	1030	982	---	---	1340	1280	729	678
14	804	777	861	828	997	985	---	---	1260	846	681	639
15	843	804	864	834	1010	978	---	---	846	780	666	639
16	855	831	870	834	1030	1010	---	---	807	780	708	669
17	894	855	861	828	1020	993	---	---	798	768	735	708
18	909	882	852	831	999	975	---	---	777	759	750	429
19	906	888	858	840	990	945	---	---	765	732	471	396
20	909	885	870	846	963	927	---	---	732	720	---	---
21	903	846	882	861	960	891	---	---	750	732	---	---
22	891	819	873	858	933	882	---	---	774	711	---	---
23	828	807	864	855	978	939	---	---	768	480	480	441
24	825	813	885	864	1010	972	---	---	462	342	537	474
25	858	825	885	867	1010	993	---	---	414	372	594	501
26	855	831	897	870	1020	996	---	---	516	420	639	582
27	837	825	894	888	1030	1020	---	---	558	510	648	567
28	840	828	894	873	1040	1010	---	---	561	519	663	510
29	846	828	912	885	1110	1040	---	---	---	---	498	438
30	846	837	921	912	1110	1050	---	---	---	---	552	465
31	849	834	---	---	1070	1040	---	---	---	---	615	558
MONTH	909	633	921	765	1110	882	1070	1020	1340	342	750	396

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	636	603	636	609	774	756	372	264	669	636	702	675
2	651	453	654	600	774	765	513	390	693	663	726	708
3	480	291	657	633	789	771	561	513	693	669	750	720
4	501	387	642	501	804	771	585	159	687	669	768	741
5	651	504	504	462	819	630	285	147	693	666	753	738
6	588	453	567	507	645	576	444	291	693	459	768	747
7	603	546	612	573	708	645	522	444	582	477	786	750
8	624	600	651	615	732	708	522	414	522	471	804	774
9	663	621	678	651	747	672	474	405	585	528	807	783
10	651	534	690	672	711	675	531	480	645	588	852	816
11	669	639	708	684	738	714	570	534	657	621	894	840
12	693	645	720	690	765	741	561	303	648	315	915	894
13	774	675	714	693	771	741	462	381	444	330	921	876
14	717	681	723	693	753	738	525	468	507	447	891	657
15	720	678	723	708	765	738	561	525	531	501	741	648
16	720	687	723	708	753	720	606	558	534	483	723	612
17	717	693	735	720	741	708	612	510	588	540	600	450
18	723	690	744	732	570	324	627	507	615	591	474	447
19	726	702	756	741	555	432	402	255	660	627	489	357
20	732	643	762	744	612	558	504	408	684	663	477	384
21	732	681	771	750	642	612	567	483	711	687	501	426
22	750	720	777	750	675	648	417	297	717	603	552	501
23	762	675	---	---	690	672	543	426	606	579	606	555
24	669	567	771	744	696	684	576	549	672	606	669	609
25	609	573	762	732	723	666	582	450	729	672	693	672
26	621	609	753	720	723	606	516	453	738	714	711	696
27	630	594	765	723	651	624	594	519	735	720	738	711
28	636	594	768	738	762	657	627	600	732	705	756	738
29	654	633	771	750	780	381	654	636	717	690	774	756
30	660	633	780	762	510	342	666	648	708	681	777	762
31	---	---	786	753	---	---	657	627	693	672	---	---
MONTH	774	291	786	462	819	324	666	147	738	315	921	357
YEAR	1340	147										

04199100 HURON RIVER BELOW MILAN, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	7.9	8.5	8.2	8.3	8.3	7.8	7.7	---	---	8.0	7.6
2	8.2	7.9	8.8	8.3	8.3	8.0	7.9	7.7	7.6	7.4	8.1	7.9
3	8.2	7.9	8.8	8.6	---	---	7.9	7.8	7.8	7.5	8.2	8.0
4	8.1	7.9	8.7	8.5	---	---	7.9	7.7	7.8	7.5	8.3	8.1
5	8.1	7.8	8.7	8.5	---	---	7.9	7.7	7.9	7.7	8.1	8.0
6	8.0	7.7	8.7	8.5	8.2	8.0	7.8	7.6	7.9	7.6	---	---
7	7.7	7.6	8.6	8.5	8.2	8.0	7.8	7.6	8.0	7.3	---	---
8	7.7	7.6	8.5	8.5	8.2	8.0	---	---	8.0	7.4	---	---
9	7.6	7.5	---	---	8.4	8.1	---	---	7.9	7.3	---	---
10	7.9	7.5	8.5	8.3	8.4	8.2	---	---	8.1	7.1	8.5	8.3
11	8.0	7.8	8.5	8.3	8.4	8.1	---	---	8.1	7.9	8.5	8.1
12	8.2	7.9	8.4	8.2	8.2	8.1	---	---	7.9	7.8	8.3	8.3
13	8.2	8.0	8.5	8.2	8.4	7.9	---	---	7.9	7.8	8.3	8.2
14	8.1	7.9	8.6	8.2	8.5	8.3	---	---	8.1	7.8	8.3	8.2
15	8.1	7.9	8.5	8.1	8.6	8.3	---	---	8.1	7.9	8.5	8.1
16	8.0	7.9	8.4	8.1	8.4	8.2	---	---	8.1	7.9	8.5	8.2
17	7.9	7.8	8.4	8.1	8.4	8.3	---	---	7.9	7.8	8.3	8.2
18	8.0	7.8	8.3	8.1	8.6	8.2	---	---	7.9	7.8	8.3	7.7
19	8.1	7.9	8.4	8.3	8.6	8.3	---	---	7.9	7.8	8.0	7.6
20	8.0	7.9	8.4	8.2	8.5	8.2	---	---	---	---	---	---
21	8.1	7.9	8.3	8.2	8.4	8.1	---	---	---	---	---	---
22	8.0	7.7	8.3	8.2	8.4	8.3	---	---	---	---	---	---
23	8.2	7.9	8.3	8.2	8.3	8.2	---	---	---	---	7.8	7.7
24	8.4	8.3	8.3	8.1	8.3	8.2	---	---	---	---	7.9	7.6
25	8.4	8.2	8.5	8.3	8.4	8.2	---	---	7.8	7.7	8.1	7.7
26	8.3	8.1	8.5	8.5	8.3	8.1	---	---	7.8	7.6	8.2	7.8
27	8.5	8.1	8.6	8.4	8.2	8.0	---	---	7.8	7.6	8.4	8.0
28	8.7	8.4	8.5	8.1	8.2	8.1	---	---	7.8	7.6	8.2	8.1
29	8.8	8.4	8.2	8.1	8.1	7.9	---	---	---	---	8.3	8.1
30	8.6	8.4	8.4	8.1	8.0	7.9	---	---	---	---	8.3	8.1
31	8.6	8.4	---	---	8.0	7.8	---	---	---	---	8.2	8.1
MONTH	8.8	7.5	8.8	8.1	8.6	7.8	7.9	7.6	8.1	7.1	8.5	7.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.3	8.0	9.0	8.4	8.7	8.2	7.7	7.5	8.6	8.2	8.5	8.2
2	8.2	8.1	9.0	8.0	8.2	7.8	7.7	7.6	8.5	8.2	8.4	8.2
3	8.2	7.8	8.6	8.0	7.9	7.7	7.8	7.7	8.7	8.0	8.4	8.1
4	8.1	7.8	8.8	7.7	8.1	7.7	7.9	7.7	8.6	8.2	8.4	8.1
5	8.2	8.0	7.9	7.6	8.0	7.6	7.7	7.2	8.3	7.8	8.6	8.2
6	8.2	8.0	8.0	7.8	7.8	7.7	7.6	7.5	7.8	7.3	8.9	8.5
7	8.4	8.0	8.2	7.8	7.9	7.8	7.7	7.6	7.8	7.4	8.7	8.5
8	8.3	8.0	8.2	7.8	7.9	7.9	7.9	7.8	7.8	7.6	8.6	8.2
9	8.4	7.9	8.2	8.0	8.0	7.8	7.9	7.8	7.9	7.6	8.6	8.1
10	8.5	8.1	8.4	8.1	7.9	7.8	7.9	7.9	7.8	7.7	8.3	8.1
11	8.5	8.3	8.5	8.1	8.0	7.9	8.0	7.9	7.8	7.7	8.5	8.1
12	8.4	8.2	8.5	8.1	8.0	7.9	8.0	7.6	7.9	7.5	8.4	8.2
13	8.5	8.3	8.6	8.0	8.1	7.9	7.7	7.6	7.7	7.6	8.4	8.1
14	8.5	8.3	8.4	8.1	8.2	8.0	7.8	7.6	7.8	7.6	8.1	7.7
15	8.6	8.1	8.3	7.8	8.7	8.1	7.7	7.6	7.9	7.8	8.2	7.7
16	8.7	8.3	8.3	7.8	8.8	8.1	7.8	7.7	7.8	7.7	8.1	7.9
17	8.8	8.2	8.2	7.9	8.8	8.3	7.9	7.6	7.8	7.7	7.9	7.7
18	8.9	8.3	8.1	7.9	7.7	7.5	8.2	7.7	8.1	7.8	7.8	7.7
19	8.9	8.3	8.3	7.7	7.7	7.6	7.6	7.4	8.3	7.9	7.8	7.6
20	8.9	8.3	7.9	7.5	7.9	7.7	7.7	7.5	8.5	8.1	7.8	7.6
21	8.3	7.9	8.0	7.6	8.1	7.8	7.8	7.7	8.4	8.1	7.9	7.8
22	8.3	7.9	8.2	7.7	8.7	8.0	7.7	7.5	8.1	7.9	7.9	7.7
23	8.2	7.9	---	---	8.9	8.4	7.7	7.6	8.1	7.8	7.8	7.7
24	8.1	7.9	8.4	7.6	9.0	8.6	7.9	7.7	8.2	7.9	7.8	7.7
25	8.1	7.8	8.7	8.1	9.1	8.3	7.9	7.6	8.4	8.1	7.8	7.7
26	8.6	7.9	9.0	8.4	8.2	7.7	7.8	7.6	8.4	8.2	7.8	7.7
27	8.7	7.9	8.8	8.5	8.4	7.7	8.1	7.6	8.5	8.1	7.8	7.7
28	8.7	7.9	8.9	8.4	8.8	8.1	8.4	7.8	8.5	8.2	7.9	7.8
29	9.0	8.2	8.9	8.5	8.5	7.7	8.4	7.8	8.5	8.2	8.0	7.9
30	8.9	8.3	9.0	8.7	7.9	7.7	8.5	7.8	8.5	8.2	8.0	7.9
31	---	---	8.8	8.7	---	---	8.4	7.9	8.5	8.1	---	---
MONTH	9.0	7.8	9.0	7.5	9.1	7.5	8.5	7.2	8.7	7.3	8.9	7.6
YEAR	9.1	7.1										

04199100 HURON RIVER BELOW MILAN, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.0	14.0	6.5	5.0	1.0	1.0	0.0	0.0	---	---	3.5	2.0
2	16.0	15.0	6.0	5.0	1.0	0.5	0.0	0.0	0.5	0.0	4.0	2.0
3	16.5	15.5	7.0	5.5	---	---	0.0	0.0	0.5	0.5	4.0	2.5
4	17.5	16.0	6.5	5.5	---	---	0.0	0.0	0.5	0.5	5.5	4.0
5	18.0	16.0	5.5	4.5	---	---	0.0	0.0	0.5	0.5	4.5	3.5
6	17.5	17.0	5.0	4.0	0.5	0.5	0.0	0.0	0.5	0.5	5.5	3.0
7	17.0	15.5	5.0	4.5	0.5	0.5	0.0	0.0	0.5	0.5	5.0	4.0
8	15.5	14.5	4.5	4.0	0.5	0.5	---	---	0.5	0.5	6.5	3.0
9	14.5	13.0	---	---	0.5	0.5	---	---	0.5	0.5	9.5	6.0
10	13.0	11.5	3.5	3.0	0.5	0.5	---	---	1.0	0.5	10.5	8.5
11	12.0	11.0	3.5	3.0	0.5	0.5	---	---	1.0	0.5	11.0	9.5
12	13.0	11.0	3.5	3.0	0.5	0.5	---	---	1.0	0.5	11.5	11.0
13	14.5	13.0	3.5	2.5	0.5	0.5	---	---	1.0	1.0	11.5	10.0
14	14.0	13.0	2.5	1.5	1.0	0.5	---	---	1.0	1.0	10.0	9.5
15	14.0	13.0	2.5	2.0	1.0	0.5	---	---	1.0	1.0	12.5	8.0
16	13.0	12.0	2.0	2.0	0.5	0.5	---	---	1.0	1.0	12.5	11.0
17	12.0	11.0	2.0	1.5	0.5	0.5	---	---	1.5	1.0	10.5	8.0
18	11.5	10.0	2.5	1.5	1.0	0.5	---	---	1.5	1.0	8.0	4.0
19	10.0	9.5	3.5	2.5	1.0	0.5	---	---	1.5	1.5	5.5	3.0
20	9.5	8.5	3.5	3.0	1.0	0.5	---	---	1.5	1.5	---	---
21	8.0	7.0	3.5	3.0	0.5	0.5	---	---	1.5	1.5	---	---
22	7.0	6.5	3.0	1.5	1.0	0.5	---	---	1.5	1.5	---	---
23	6.5	6.0	1.5	0.5	0.5	0.5	---	---	1.5	1.5	5.0	4.0
24	6.5	6.0	1.0	1.0	0.5	0.5	---	---	1.5	1.5	5.5	3.0
25	7.5	6.5	1.5	1.0	0.5	0.5	---	---	2.0	2.0	6.5	3.0
26	7.5	7.0	4.0	1.5	0.5	0.5	---	---	2.0	2.0	7.5	4.0
27	7.0	6.0	6.0	4.0	0.5	0.5	---	---	2.5	2.0	9.5	5.5
28	6.0	5.0	6.0	5.0	0.5	0.5	---	---	3.0	2.0	10.0	9.5
29	5.5	4.0	5.0	1.5	0.0	0.0	---	---	---	---	13.5	10.0
30	5.5	5.0	2.0	1.0	0.0	0.0	---	---	---	---	15.5	11.5
31	6.0	5.5	---	---	0.0	0.0	---	---	---	---	15.0	10.5
MONTH	18.0	4.0	7.0	0.5	1.0	0.0	0.0	0.0	3.0	0.0	15.5	2.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	9.0	16.0	14.5	24.0	22.0	22.0	20.5	26.5	25.0	27.5	25.5
2	12.0	11.0	18.5	16.0	22.0	20.0	23.5	20.0	26.0	25.0	27.5	26.0
3	12.5	11.0	17.0	15.0	21.5	19.5	23.0	21.0	26.5	25.0	27.0	26.5
4	11.0	9.5	17.5	15.0	22.0	20.0	23.5	22.0	27.0	25.0	27.5	25.5
5	10.5	8.0	19.0	15.0	21.5	20.5	24.0	22.0	27.5	25.5	27.0	26.0
6	8.0	6.5	19.0	18.0	20.0	17.5	26.5	23.5	27.0	25.0	26.5	25.0
7	7.5	5.5	19.0	17.0	17.5	15.5	27.5	25.0	25.5	24.0	26.0	24.0
8	8.0	5.5	19.0	15.5	17.5	16.0	27.5	24.5	25.0	24.0	25.5	24.5
9	9.5	5.5	16.0	12.0	18.0	16.0	25.5	24.0	26.0	24.5	25.5	24.0
10	12.5	8.0	13.5	11.5	18.5	18.0	25.5	23.5	25.5	24.5	25.0	24.0
11	16.0	12.5	16.5	12.5	20.0	18.0	25.0	24.0	26.5	24.5	24.5	23.0
12	18.0	16.5	18.0	15.0	18.5	18.0	25.5	23.0	25.5	22.5	23.5	22.5
13	19.5	17.5	20.0	15.5	19.0	17.0	26.5	24.0	23.0	21.5	22.5	21.5
14	20.0	17.5	22.0	18.0	21.5	18.5	27.0	25.0	24.5	23.0	21.5	20.0
15	18.5	16.0	22.0	20.0	24.0	21.0	27.5	25.5	25.0	23.0	20.5	17.5
16	17.0	15.5	21.5	19.5	24.5	22.5	29.0	27.0	24.5	23.5	20.0	17.5
17	15.5	14.0	22.5	20.5	25.5	23.5	27.5	25.5	25.0	23.0	22.0	19.5
18	16.0	14.0	24.0	22.0	24.5	21.0	28.0	25.5	25.0	23.0	22.5	21.0
19	18.5	15.0	26.0	24.5	25.0	23.5	26.0	22.5	23.5	21.5	22.5	21.0
20	20.5	17.5	26.0	24.0	25.0	22.5	27.5	25.0	22.5	20.0	22.0	20.0
21	21.0	19.5	26.5	25.0	25.5	23.5	28.5	26.0	21.5	20.5	20.0	19.0
22	21.0	19.5	26.5	25.0	24.5	23.0	25.0	23.0	22.0	20.5	19.0	18.0
23	19.0	13.5	---	---	24.5	23.0	24.5	23.0	23.5	21.0	20.0	19.0
24	13.5	13.0	27.0	24.5	25.0	24.0	25.0	23.0	24.0	22.0	20.5	19.5
25	13.5	12.0	26.5	25.0	26.5	24.0	25.0	23.5	23.5	21.5	21.5	19.5
26	13.5	11.0	27.5	25.0	27.0	24.5	24.5	23.5	22.0	20.5	22.0	20.5
27	16.0	11.5	26.0	24.5	27.0	25.0	24.5	22.5	25.0	21.5	22.0	20.5
28	16.0	11.5	27.5	24.5	27.0	26.0	24.5	22.0	27.0	23.5	21.0	19.5
29	14.0	9.5	25.5	24.0	26.5	22.0	24.5	23.0	26.5	25.0	19.5	18.0
30	14.5	12.5	24.0	23.0	23.0	21.0	26.0	23.5	26.0	25.5	18.5	17.5
31	---	---	24.5	23.0	---	---	26.0	24.0	26.5	25.0	---	---
MONTH	21.0	5.5	27.5	11.5	27.0	15.5	29.0	20.0	27.5	20.0	27.5	17.5
YEAR	29.0	0.0										

04199100 HURON RIVER BELOW MILAN, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.7	7.9	10.5	9.8	13.2	12.1	10.6	9.0	---	---	13.6	13.3
2	8.6	7.7	11.8	10.3	13.6	12.8	9.6	8.8	8.2	7.0	13.5	13.4
3	8.4	7.5	11.6	10.6	---	---	9.1	8.4	9.0	8.3	13.8	13.3
4	8.3	7.2	11.2	10.3	---	---	9.4	8.6	9.9	7.7	13.4	12.8
5	8.4	7.2	12.3	10.5	---	---	9.1	8.6	10.3	8.7	13.3	13.0
6	7.7	7.1	12.1	11.2	11.7	11.3	9.2	8.7	11.0	10.3	13.2	12.4
7	7.2	6.4	12.1	11.4	12.1	11.4	9.8	9.0	10.9	10.6	12.9	12.3
8	6.6	6.0	12.3	11.5	12.5	11.8	---	---	10.8	10.3	13.0	12.1
9	6.3	5.8	---	---	12.7	12.0	---	---	10.6	8.2	12.0	11.3
10	6.3	6.0	12.9	12.6	14.1	12.7	---	---	10.8	8.4	11.6	10.9
11	8.2	7.2	12.8	12.3	14.1	13.4	---	---	10.8	10.2	11.7	10.5
12	9.1	8.3	12.4	11.9	13.6	12.8	---	---	10.2	9.1	11.1	10.3
13	8.8	7.9	12.9	12.2	14.1	13.1	---	---	10.1	9.4	10.9	9.9
14	8.0	7.3	13.2	12.9	14.8	13.4	---	---	12.0	8.8	11.4	10.6
15	7.7	7.2	13.3	13.0	15.0	13.9	---	---	12.4	11.3	11.7	10.7
16	7.6	7.1	13.5	13.0	15.0	14.0	---	---	12.3	12.0	11.3	10.1
17	7.7	7.3	13.5	13.1	14.5	13.5	---	---	12.1	11.3	12.2	10.7
18	7.9	7.6	13.0	12.5	14.1	13.3	---	---	11.4	10.8	12.2	11.2
19	8.2	7.6	13.1	12.7	14.2	13.2	---	---	11.2	10.8	13.4	12.3
20	9.1	7.5	13.3	12.9	14.5	13.9	---	---	11.1	10.1	---	---
21	9.4	8.0	12.9	12.6	14.3	12.9	---	---	10.7	9.9	---	---
22	9.7	7.4	13.2	12.5	14.0	12.6	---	---	11.8	9.3	---	---
23	10.4	9.4	13.1	12.6	13.7	12.6	---	---	11.7	10.7	12.4	12.0
24	10.8	10.2	13.8	13.0	14.0	13.1	---	---	13.2	11.6	12.5	11.8
25	10.8	9.7	13.8	13.4	13.6	13.0	---	---	13.6	13.3	12.3	11.4
26	9.6	8.8	13.7	12.5	13.6	13.0	---	---	13.6	13.4	11.9	10.9
27	10.7	9.0	12.4	11.6	13.1	12.5	---	---	13.8	13.2	11.2	10.2
28	11.4	10.1	11.6	9.9	12.6	11.5	---	---	13.8	13.4	9.9	9.4
29	11.5	10.8	11.3	9.7	11.7	10.8	---	---	---	---	9.6	8.8
30	11.3	10.6	13.6	11.3	11.2	10.5	---	---	---	---	9.0	7.9
31	11.1	10.3	---	---	11.2	10.5	---	---	---	---	9.6	7.8
MONTH	11.5	5.8	13.8	9.7	15.0	10.5	10.6	8.4	13.8	7.0	13.8	7.8

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.1	9.2	12.8	8.8	15.0	11.0	8.9	6.0	14.3	10.7	14.1	10.1
2	9.3	8.4	12.1	7.6	10.8	6.2	9.4	8.6	14.0	10.1	13.1	10.3
3	8.9	8.	11.3	8.2	7.7	4.9	9.0	8.6	15.0	9.8	12.4	9.0
4	9.1	8.6	11.3	8.4	10.6	5.4	9.1	7.9	13.9	10.4	15.0	8.8
5	9.3	6.4	9.1	7.2	8.6	4.9	8.1	7.7	11.6	8.0	13.8	9.7
6	10.2	9.3	7.6	7.1	8.0	5.7	8.3	7.7	8.4	4.5	15.0	11.4
7	10.6	10.0	8.2	7.1	8.6	7.9	7.9	7.4	7.2	4.8	15.0	11.6
8	10.5	10.1	8.7	7.2	8.5	7.1	8.4	7.2	7.2	6.7	15.0	11.4
9	10.7	10.0	9.3	7.9	8.5	7.4	8.3	8.0	8.0	7.0	15.0	9.7
10	10.0	9.4	9.8	9.0	8.5	7.4	8.4	7.8	7.3	6.6	11.4	9.2
11	9.5	7.8	10.0	7.9	8.7	6.5	8.9	7.6	7.6	6.0	13.5	8.5
12	7.8	6.8	9.7	7.1	7.7	6.6	8.9	7.5	8.1	6.6	12.2	9.2
13	7.9	6.8	9.3	7.1	8.4	6.8	7.8	7.3	8.4	8.0	10.1	8.5
14	8.0	7.0	8.9	6.4	9.9	7.5	7.5	6.9	8.2	7.4	8.6	5.4
15	8.8	8.2	7.7	5.4	15.0	8.4	7.5	6.4	8.8	7.4	8.9	6.1
16	10.3	8.2	7.8	5.5	15.0	9.5	7.0	6.6	8.1	6.9	9.0	8.0
17	11.0	9.0	7.5	5.8	15.0	11.0	7.3	6.3	7.9	7.2	8.6	7.6
18	11.7	9.7	6.6	5.7	7.9	5.4	9.6	6.5	10.1	7.0	8.2	7.7
19	12.2	9.1	8.3	5.4	7.3	6.2	7.5	6.5	11.0	8.0	8.0	7.5
20	11.8	8.1	10.3	6.3	8.0	6.6	7.2	6.7	12.8	8.6	8.7	7.6
21	8.5	6.3	11.4	6.3	10.1	6.4	7.2	6.1	11.8	9.6	8.9	8.7
22	8.2	7.0	13.2	6.9	14.6	8.5	7.3	6.0	9.2	7.8	8.9	8.7
23	9.3	7.2	---	---	15.0	11.2	7.7	6.7	8.6	7.5	8.8	8.0
24	9.8	9.1	15.0	8.7	15.0	12.5	8.4	7.3	9.2	7.2	8.4	7.5
25	10.2	9.3	15.0	11.4	15.0	10.3	7.9	6.5	11.3	7.1	7.8	7.4
26	10.9	9.6	15.0	14.5	9.3	4.7	7.8	6.3	12.0	8.8	8.0	7.3
27	11.0	9.5	15.0	15.0	10.9	5.8	10.4	6.9	14.4	9.8	7.5	6.6
28	10.5	8.5	15.0	14.3	15.0	7.7	12.9	7.8	14.3	10.4	7.8	6.7
29	12.8	10.2	15.0	15.0	11.5	4.5	12.8	8.8	13.2	10.1	8.2	7.2
30	12.7	9.5	15.0	14.5	8.3	7.4	15.0	9.0	12.6	9.0	8.7	7.9
31	---	---	15.0	15.0	---	---	12.6	9.4	12.8	8.5	---	---
MONTH	12.8	6.3	15.0	5.4	15.0	4.5	15.0	6.0	15.0	4.5	15.0	5.4
YEAR	15.0	4.5										

04199500 VERMILION RIVER NEAR VERMILION, OH

LOCATION.--Lat 41°22'55", long 82°19'01", in T.6 N., R.19 W., Lorain County, Hydrologic Unit 04100012, on right bank 40 ft (12 m) downstream from bridge on North Ridge Road, 3.5 mi (5.6 km) southeast of Vermilion and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--262 mi² (679 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1950 to current year.

REVISED RECORDS.--WSP 1912: Drainage area. WRD Ohio 1970: 1969.

GAGE.--Water-stage recorders. Datum of gage is 595.14 ft (181.399 m) above mean sea level. Prior to Aug. 3, 1953, nonrecording gage at site 40 ft (12 m) upstream at same datum.

REMARKS.--Records good except those for period of no gage height record and winter periods, which are fair.

AVERAGE DISCHARGE.--27 years, 240 ft³/s (6.797 m³/s), 12.44 in/yr (316 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,800 ft³/s (1,160 m³/s) July 6, 1969, gage height, 17.14 ft (5.224 m), from rating curve extended above 7,000 ft³/s (198 m³/s on basis of contracted-opening measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 ft³/s (90.6 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 23	2000	*8775	248	*8.07	2.460	Mar. 19	0700	3760	106	6.03	1.840
July 5	1900	7100	201	7.40	2.260	Apr. 3	1600	3700	105	6.00	1.829

Minimum discharge, 7.2 ft³/s (0.20 m³/s) June 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	139	26	19	16	522	325	160	17	2360	70	13
2	59	175	25	19	16	346	643	260	14	1010	38	13
3	39	156	24	19	16	280	3380	370	12	304	25	11
4	31	117	24	19	16	447	1950	640	10	380	19	9.7
5	26	94	24	19	15	1890	922	1050	12	4900	20	9.3
6	23	79	23	19	15	705	720	656	83	2160	30	8.8
7	26	69	23	19	15	416	480	385	211	501	156	315
8	21	62	23	19	15	299	340	234	133	753	222	115
9	32	58	23	18	14	234	270	164	81	584	130	58
10	96	50	23	18	14	222	225	124	61	238	67	37
11	130	52	23	18	14	203	175	99	65	147	48	26
12	112	48	22	18	14	175	140	83	50	182	357	37
13	74	46	22	18	14	804	120	73	36	207	416	31
14	52	48	22	18	14	1070	105	63	29	115	218	43
15	41	50	22	18	13	536	92	56	25	76	352	386
16	32	55	22	17	42	357	86	49	21	65	133	189
17	27	53	22	17	310	250	80	45	24	117	74	941
18	25	36	22	17	260	1190	78	41	59	55	153	721
19	23	33	21	17	230	3360	77	37	24	85	112	606
20	26	32	21	17	205	1630	84	34	18	122	58	950
21	41	31	21	17	170	989	130	30	14	76	40	416
22	56	32	21	17	200	1560	290	27	10	577	40	203
23	53	37	21	17	390	2310	500	26	8.8	200	85	125
24	61	36	21	17	2600	1300	540	24	7.6	83	91	94
25	105	35	21	17	3610	681	460	23	15	110	52	72
26	222	31	20	16	2060	441	370	20	76	87	36	58
27	207	30	20	16	1140	330	320	19	61	45	27	45
28	147	29	20	16	885	729	280	17	30	30	22	38
29	107	28	20	16	---	1780	220	15	556	25	18	31
30	85	27	20	16	---	1080	195	13	779	23	16	29
31	87	---	20	16	---	515	---	13	---	55	14	---
TOTAL	2149	1768	682	544	12323	25851	13597	4850	2542.4	15672	3139	5630.8
MEAN	69.3	58.9	22.0	17.5	440	834	453	156	84.7	506	101	188
MAX	222	175	26	19	3610	3360	3380	1050	779	4900	416	950
MIN	21	27	20	16	13	175	77	13	7.6	23	14	8.8
CFSM	.27	.23	.08	.07	1.68	3.18	1.73	.60	.32	1.93	.39	.72
IN.	.31	.25	.10	.08	1.75	3.67	1.93	.69	.36	2.23	.45	.80

CAL YR 1976 TOTAL 80695.0 MEAN 220 MAX 8100 MIN 2.2 CFSM .84 IN 11.46
WTR YR 1977 TOTAL 88748.2 MEAN 243 MAX 4900 MIN 7.6 CFSM .93 IN 12.60

Note: No gage height record Apr. 6 to May 5.

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950 to 1952, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1969 to current year.
pH: December 1976 to current year.
WATER TEMPERATURES: March to August 1950, February 1969 to current year.
DISSOLVED OXYGEN: December 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since February 1969.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Sediment data collected at this site 1970 to 1974.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,200 micromhos Nov. 21, 1974; minimum, 160 micromhos Jan. 19, 1974.
pH: Maximum, 9.1 units May 1, 11, 1977; minimum, 7.4 units July 1, 1977.
WATER TEMPERATURES: Maximum, 34.0°C Aug. 5, 1973, July 8, 1974; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.4 mg/L Dec. 22, 1976, Apr. 30, 1977; minimum, 5.2 mg/L May 19, 20, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,500 micromhos Feb. 12, 13; minimum, 180 micromhos July 22.
pH: Maximum, 9.1 units May 1, 11; minimum, 7.4 units July 1.
WATER TEMPERATURES: Maximum, 30.5°C June 25, July 20; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 14.4 mg/L Dec. 22, Apr. 30; minimum, 5.2 mg/L May 19, 20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
02...	0830	276	465	8.0	.5	13.2	92	2.1	210	120	56	16
JUN												
15...	1630	22	615	8.7	20.5	11.4	140	1.2	260	130	70	20

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
02...	12	4.2	110	0	90	1.8	81	29	.1	7.2	260	4.5
JUN												
15...	17	4.6	138	9	128	.5	96	33	.2	1.8	320	7.9

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
02...	.04	.19	.09	1	20	26	40	14	40	.0	40	3.0
JUN												
15...	.04	.04	.04	3	<10	5	30	3	20	.1	20	5.8

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	458	426	667	658	813	755	957	946	1020	946		
2	481	457	661	648	761	737	958	954	976	655		
3	509	481	650	618	877	761	1180	954	1090	943		
4	527	503	647	634	812	759	961	652	1050	934		
5	539	520	658	645	772	759	961	952	1010	939		
6	549	535	650	638	1120	774	1040	952	1070	934		
7	566	535	661	635	969	807	1080	954	960	930		
8	628	571	650	631	854	820	960	954	937	928		
9	653	557	658	585	836	812	966	955	987	928		
10	622	558	678	638	820	798	1040	948	1400	934		
11	588	550	690	654	830	805	1000	939	1410	1020		
12	591	519	672	659	838	817	1050	940	1500	1410		
13	547	524	676	659	843	810	1130	939	1500	939		
14	576	550	678	616	869	846	1020	955	928	834		
15	603	581	687	638	918	851	958	939	829	709		
16	617	595	694	573	925	907	954	939	715	696		
17	627	610	709	676	921	886	954	945	697	685		
18	636	622	698	674	888	856	1080	954	---	---		
19	648	629	698	684	889	838	1090	951	---	---		
20	669	645	692	683	894	819	978	948	---	---		
21	668	642	844	684	996	871	966	949	---	---		
22	674	648	693	684	946	904	1050	948	---	---		
23	657	643	702	685	1010	924	978	955	---	---		
24	665	651	721	690	961	936	963	951	---	---		
25	673	657	707	687	936	895	1090	951	---	---		
26	659	637	769	671	987	895	1130	958	---	---		
27	642	634	690	670	951	913	1000	952	---	---		
28	656	637	689	676	934	907	957	946	---	---		
29	659	652	722	668	961	912	961	948	---	---		
30	663	658	767	726	1200	921	966	949	---	---		
31	667	656	---	---	945	936	955	948	---	---		
MONTH	674	426	844	573	1200	737	1130	652	1500	655		

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	584	542	687	672	354	246	540	483	513	501
2	---	---	584	564	699	681	384	288	546	498	534	498
3	---	---	584	504	699	684	432	384	534	480	555	537
4	---	---	620	402	705	687	456	432	561	537	576	555
5	---	---	462	438	717	678	---	---	585	540	576	534
6	---	---	459	450	705	615	---	---	561	540	579	567
7	---	---	516	459	639	609	---	---	567	360	603	279
8	---	---	561	489	618	603	---	---	435	360	306	273
9	---	---	546	519	672	600	---	---	483	420	336	309
10	---	---	552	525	687	651	---	---	432	390	372	339
11	---	---	564	531	693	668	---	---	405	387	387	369
12	---	---	753	543	702	684	---	---	462	288	393	384
13	---	---	594	552	690	654	---	---	294	264	414	387
14	578	552	612	570	684	648	---	---	363	297	492	408
15	666	548	624	591	684	642	---	---	381	315	504	357
16	---	---	636	603	678	648	---	---	381	312	423	354
17	572	564	648	612	672	630	---	---	387	378	441	330
18	582	566	657	642	669	597	---	---	453	393	372	327
19	602	566	669	654	648	582	---	---	498	456	408	375
20	614	582	675	660	657	639	537	525	468	375	396	354
21	626	588	681	666	666	633	534	510	375	357	---	---
22	636	608	696	675	678	633	504	180	390	366	---	---
23	704	588	678	669	681	639	264	186	387	369	---	---
24	756	512	681	669	672	630	321	267	441	390	420	360
25	746	686	690	678	705	609	375	324	462	435	447	396
26	618	512	693	678	675	630	378	333	546	462	459	402
27	716	518	696	681	675	660	432	381	549	504	417	390
28	734	546	705	687	675	636	456	432	546	501	423	387
29	798	554	699	675	639	264	489	456	540	522	453	378
30	560	548	705	675	405	258	510	489	540	525	459	426
31	---	---	699	675	---	---	516	483	537	474	---	---
MONTH	798	512	753	402	717	258	537	180	585	264	603	273
YEAR	1500	180										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1					---	---	7.9	7.8	7.8	7.8		
2					---	---	7.9	7.8	7.8	7.8		
3					---	---	7.9	7.8	7.9	7.8		
4					---	---	7.8	7.8	7.8	7.8		
5					---	---	7.9	7.8	7.8	7.8		
6					---	---	7.9	7.8	7.8	7.8		
7					---	---	7.8	7.8	7.8	7.8		
8					---	---	7.8	7.8	7.8	7.8		
9					---	---	7.8	7.8	7.9	7.8		
10					---	---	7.8	7.8	7.9	7.8		
11					---	---	7.8	7.8	7.8	7.7		
12					---	---	7.8	7.8	7.8	7.8		
13					---	---	7.8	7.7	8.0	7.9		
14					---	---	7.8	7.8	8.1	8.0		
15					8.3	8.1	7.8	7.8	8.1	7.9		
16					8.3	8.0	7.8	7.8	8.0	7.9		
17					8.2	8.1	7.8	7.8	7.9	7.9		
18					8.3	8.0	7.8	7.8	---	---		
19					8.4	8.1	7.8	7.7	---	---		
20					8.2	8.1	7.7	7.7	---	---		
21					8.2	8.0	7.7	7.7	---	---		
22					8.2	7.9	7.8	7.7	---	---		
23					8.1	8.0	7.8	7.8	---	---		
24					8.1	7.9	7.8	7.7	---	---		
25					8.1	7.9	7.8	7.8	---	---		
26					8.1	7.9	7.9	7.8	---	---		
27					8.0	7.9	7.9	7.8	---	---		
28					7.9	7.9	7.9	7.8	---	---		
29					8.0	7.9	7.8	7.8	---	---		
30					7.9	7.8	7.8	7.8	---	---		
31					7.9	7.8	7.8	7.8	---	---		
MONTH					8.4	7.8	7.9	7.7	8.1	7.7		

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	9.1	8.3	8.4	7.9	7.6	7.4	8.5	8.2	8.5	8.1
2	---	---	8.7	8.3	8.3	8.0	7.7	7.5	8.7	8.3	8.4	7.9
3	---	---	8.6	8.1	8.6	8.1	7.8	7.7	8.8	8.2	8.4	8.0
4	---	---	8.3	7.8	8.5	8.1	7.9	7.8	8.7	8.1	8.4	8.0
5	---	---	7.9	7.8	8.4	8.0	---	---	8.5	8.0	8.4	8.1
6	---	---	8.0	7.8	8.4	8.1	---	---	8.5	8.1	8.4	8.1
7	---	---	8.4	7.9	8.2	8.0	---	---	8.1	7.8	8.2	7.8
8	---	---	8.7	8.1	8.1	8.0	---	---	8.0	7.8	8.0	7.8
9	---	---	8.9	8.2	8.3	7.9	---	---	8.2	8.0	8.3	7.8
10	---	---	9.0	8.3	8.4	8.1	---	---	8.3	8.0	8.4	7.9
11	---	---	9.1	8.4	8.4	8.1	---	---	8.5	8.0	8.6	8.0
12	---	---	9.0	8.5	8.4	8.1	---	---	8.3	7.8	8.5	8.0
13	---	---	8.8	8.4	8.7	8.1	---	---	7.9	7.8	8.4	7.8
14	8.6	8.3	8.7	8.2	8.7	8.1	---	---	8.1	7.9	8.5	7.8
15	8.7	8.2	8.6	8.1	8.7	8.0	---	---	8.0	7.9	8.1	7.9
16	8.8	8.3	8.6	8.1	8.7	8.0	---	---	8.0	7.9	7.9	7.8
17	8.8	8.3	8.5	8.0	8.6	7.9	---	---	8.2	8.0	7.9	7.7
18	8.9	8.4	8.5	7.9	8.3	7.9	---	---	8.2	8.0	7.8	7.7
19	8.8	8.3	8.5	7.9	8.4	7.9	---	---	8.3	8.2	7.9	7.8
20	8.7	8.2	8.5	7.9	8.4	7.9	8.2	8.1	8.4	8.1	7.8	7.8
21	8.6	8.1	8.5	7.9	8.6	7.9	8.3	8.1	8.4	8.1	8.0	7.8
22	8.4	8.2	8.5	7.9	8.6	7.9	8.1	7.5	8.5	8.1	8.1	8.0
23	8.2	8.0	8.4	7.9	8.8	8.0	7.8	7.5	8.4	8.1	8.2	8.1
24	8.2	8.1	8.5	7.9	8.7	7.9	8.0	7.8	8.4	8.1	8.2	7.8
25	8.2	8.1	8.5	7.9	8.6	7.7	8.0	7.9	8.5	8.2	8.3	8.1
26	8.4	8.1	8.4	7.9	8.3	7.9	8.1	7.9	8.7	8.3	8.4	8.2
27	8.7	8.2	8.4	7.9	8.5	8.1	8.2	8.0	8.8	8.2	8.5	8.2
28	8.8	8.3	8.5	7.9	8.4	8.0	8.3	8.1	8.8	8.1	8.6	8.2
29	9.0	9.9	8.5	7.9	8.3	7.5	8.4	8.1	8.6	8.1	8.7	8.2
30	9.0	9.3	8.5	8.0	7.6	7.5	8.5	8.1	8.6	8.1	8.7	8.2
31	---	---	8.5	7.9	---	---	8.7	8.1	8.6	8.1	---	---
MONTH	9.0	8.0	9.1	7.8	8.8	7.5	8.7	7.4	8.8	7.8	8.7	7.7
YEAR	9.1	7.4										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.5	12.0	5.5	3.0	0.0	0.0	1.0	1.0	0.5	0.5		
2	15.5	13.0	6.0	3.5	0.0	0.0	1.0	1.0	0.5	0.5		
3	18.0	13.5	7.0	5.0	0.0	0.0	1.0	1.0	0.0	0.0		
4	18.5	13.5	5.0	3.5	0.0	0.0	1.0	1.0	0.0	0.0		
5	19.0	14.0	5.0	3.0	0.0	0.0	1.0	1.0	0.5	0.0		
6	17.0	15.0	5.0	3.0	0.0	0.0	1.0	1.0	0.0	0.0		
7	14.5	12.0	4.5	3.0	0.0	0.0	1.0	1.0	0.0	0.0		
8	12.5	11.0	3.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0		
9	11.0	9.5	3.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0		
10	11.0	8.5	3.5	1.5	0.5	0.0	1.0	1.0	0.0	0.0		
11	13.0	10.0	3.5	1.5	0.5	0.5	1.0	1.0	0.0	0.0		
12	13.0	9.5	3.0	1.0	0.5	0.5	1.0	1.0	0.0	0.0		
13	15.5	12.0	3.0	0.0	1.0	0.5	1.0	1.0	0.0	0.0		
14	13.5	10.5	2.5	0.0	1.0	0.5	1.0	1.0	0.0	0.0		
15	14.0	10.0	1.5	0.0	1.0	1.0	1.0	1.0	0.0	0.0		
16	12.0	9.0	1.0	0.0	1.5	1.0	1.0	0.5	0.0	0.0		
17	10.0	7.5	1.5	0.0	1.5	1.0	0.5	0.5	0.0	0.0		
18	9.0	6.5	3.5	0.0	1.5	1.0	1.0	0.5	---	---		
19	8.0	8.0	5.0	1.5	1.5	1.0	0.5	0.5	---	---		
20	8.5	7.5	2.5	0.5	1.5	1.0	0.5	0.5	---	---		
21	7.5	5.5	2.0	0.5	1.5	1.0	0.5	0.5	---	---		
22	6.5	4.0	0.5	0.0	1.5	1.0	0.5	0.5	---	---		
23	6.0	3.5	0.0	0.0	1.0	1.0	0.5	0.5	---	---		
24	7.5	5.5	0.0	0.0	1.0	1.0	0.5	0.5	---	---		
25	7.5	7.5	0.5	0.0	1.0	1.0	0.5	0.5	---	---		
26	7.0	6.0	5.5	1.0	1.5	1.0	0.5	0.5	---	---		
27	6.0	5.5	7.5	5.5	1.0	1.0	0.5	0.5	---	---		
28	6.0	3.5	6.0	1.5	1.5	1.0	0.5	0.5	---	---		
29	6.0	3.0	1.5	0.0	1.5	1.0	0.5	0.5	---	---		
30	5.5	5.0	0.0	0.0	1.5	1.5	0.5	0.5	---	---		
31	6.0	5.0	---	---	1.0	1.0	0.5	0.5	---	---		
MONTH	19.0	[illegible]	7.5	0.0	1.5	0.0	1.0	0.5	0.5	0.0		

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	18.0	11.5	22.0	19.0	21.0	19.5	26.5	22.5	29.0	23.0
2	---	---	16.5	14.5	18.5	15.0	22.5	19.0	27.0	20.5	28.5	23.5
3	---	---	17.0	13.5	23.0	12.5	23.5	19.0	28.0	21.5	27.5	22.5
4	---	---	15.5	14.0	25.5	14.5	24.5	21.0	29.5	22.5	26.5	19.5
5	---	---	18.0	14.0	21.0	19.0	---	---	29.5	23.5	28.0	21.0
6	---	---	18.5	17.0	18.5	15.5	---	---	26.5	24.5	25.0	21.5
7	---	---	19.0	15.5	18.0	14.5	---	---	24.5	23.0	22.5	20.0
8	---	---	18.0	13.5	17.5	14.0	---	---	24.0	22.5	23.0	19.0
9	---	---	13.5	10.5	20.5	14.5	---	---	25.0	22.0	24.0	20.0
10	---	---	16.0	9.0	22.0	15.5	---	---	25.0	23.0	23.0	19.5
11	---	---	18.0	11.0	18.5	16.5	---	---	27.0	22.5	22.5	17.5
12	---	---	16.0	13.0	17.5	16.0	---	---	24.5	22.0	19.0	16.5
13	---	---	21.0	14.5	20.5	15.0	---	---	22.0	20.5	19.5	17.5
14	18.5	15.0	23.0	17.5	25.0	18.5	---	---	24.5	21.0	20.0	17.5
15	18.0	12.5	22.5	15.5	27.0	19.0	---	---	24.0	20.5	17.0	16.5
16	15.5	13.0	24.0	15.5	27.0	20.0	---	---	23.0	21.0	18.0	16.5
17	16.0	12.5	25.5	19.0	28.5	22.0	---	---	25.0	21.5	19.0	17.5
18	17.0	13.5	27.5	21.0	26.5	22.0	---	---	22.5	19.5	20.0	18.5
19	19.5	15.5	28.5	21.0	27.0	20.5	---	---	21.0	18.0	20.5	19.0
20	22.0	17.5	29.0	20.5	25.0	20.0	30.5	28.5	22.0	17.0	19.5	18.5
21	21.0	18.0	29.0	21.5	27.5	19.0	30.0	26.0	20.5	18.5	18.0	17.0
22	19.5	17.0	28.5	21.5	27.5	18.5	25.5	22.0	23.5	18.0	18.5	16.5
23	16.5	13.0	25.5	22.0	27.5	18.0	25.0	20.0	22.0	19.5	19.5	17.0
24	13.5	12.0	29.5	21.0	27.0	19.5	25.5	20.5	22.0	19.0	19.0	17.0
25	12.5	11.0	30.0	22.0	30.5	21.5	25.0	22.5	21.5	17.0	21.0	17.5
26	14.0	10.0	28.5	21.0	26.5	22.5	24.5	20.0	24.0	16.5	21.0	18.5
27	15.5	10.0	28.0	18.5	27.0	21.0	24.5	19.5	28.0	21.0	21.0	17.5
28	14.5	9.5	28.5	18.5	27.5	24.0	26.0	18.5	29.0	23.5	19.0	16.5
29	14.5	7.5	26.0	19.5	25.5	20.5	25.0	21.5	25.5	23.5	17.5	15.0
30	16.0	10.0	24.5	18.0	20.5	19.5	28.5	21.5	26.0	21.5	19.0	15.0
31	---	---	26.5	18.0	---	---	28.0	22.5	28.5	20.5	---	---
MONTH	22.0	7.5	30.0	9.0	30.5	12.5	30.5	18.5	29.5	16.5	29.0	15.0
YEAR	30.5	0.0										

04199500 VERMILION RIVER NEAR VERMILION, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1					---	---	10.7	9.7	10.7	10.2		
2					---	---	11.0	9.9	10.9	10.4		
3					---	---	10.6	9.9	10.7	9.5		
4					---	---	10.3	9.6	9.7	8.5		
5					---	---	10.9	9.9	8.6	8.2		
6					---	---	10.8	9.8	8.9	8.1		
7					---	---	10.0	9.5	10.1	8.9		
8					---	---	10.0	9.0	10.5	10.1		
9					---	---	10.4	9.4	10.7	10.3		
10					---	---	9.6	8.9	10.6	10.0		
11					---	---	9.0	8.8	10.4	9.6		
12					---	---	9.8	8.9	10.7	9.3		
13					---	---	10.3	9.8	12.1	10.8		
14					---	---	10.0	9.7	12.5	12.1		
15					14.4	11.9	9.8	9.5	12.7	12.5		
16					13.7	11.3	9.6	9.3	12.9	12.1		
17					13.4	11.2	9.7	9.3	12.6	12.4		
18					14.7	11.8	9.7	9.4	---	---		
19					14.7	12.1	9.4	8.4	---	---		
20					12.9	11.5	8.6	8.2	---	---		
21					14.2	11.6	8.5	8.2	---	---		
22					14.9	12.2	8.8	8.4	---	---		
23					14.1	12.2	9.1	8.6	---	---		
24					14.1	12.3	9.0	8.7	---	---		
25					14.0	11.9	9.1	8.7	---	---		
26					12.9	11.5	9.3	8.7	---	---		
27					12.2	11.3	9.6	9.1	---	---		
28					11.6	10.9	9.7	9.1	---	---		
29					12.3	10.5	10.0	9.7	---	---		
30					11.1	10.2	10.3	9.8	---	---		
31					10.4	9.6	10.6	10.3	---	---		
MONTH					14.9	9.6	11.0	8.2	12.9	8.1		

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	14.5	8.3	11.1	6.5	8.7	8.4	10.3	7.0	8.9	6.6
2	---	---	11.7	8.0	11.0	8.2	9.0	8.4	11.2	7.3	9.0	6.6
3	---	---	12.5	8.5	13.2	8.7	9.2	8.3	12.4	7.2	9.1	6.7
4	---	---	9.3	8.2	12.7	7.5	8.8	8.2	10.5	6.6	9.1	6.8
5	---	---	9.4	7.4	10.5	7.4	---	---	9.4	6.6	8.6	6.4
6	---	---	8.5	7.5	11.4	8.6	---	---	8.6	6.3	9.2	6.5
7	---	---	9.8	7.6	10.7	9.5	---	---	7.0	6.3	7.9	7.3
8	---	---	11.2	7.8	10.6	9.4	---	---	7.8	6.3	8.6	7.5
9	---	---	12.9	8.0	11.2	9.0	---	---	8.3	7.2	8.9	7.2
10	---	---	13.6	8.7	11.8	8.9	---	---	9.0	7.2	9.3	7.2
11	---	---	14.4	7.8	11.7	8.9	---	---	9.3	6.9	10.2	7.8
12	---	---	14.0	7.5	11.8	9.0	---	---	8.9	6.9	10.2	8.2
13	---	---	12.5	6.8	13.3	8.8	---	---	7.5	7.1	9.8	8.0
14	11.8	8.7	10.9	6.3	13.4	8.0	---	---	7.3	6.8	10.0	7.9
15	12.8	8.6	12.0	6.5	13.2	7.6	---	---	7.2	6.5	8.8	8.0
16	13.0	8.5	10.6	5.9	12.3	7.2	---	---	7.9	6.4	8.5	7.8
17	14.0	9.0	9.4	5.6	11.8	7.1	---	---	8.3	7.4	8.1	7.3
18	14.5	8.5	9.4	5.3	9.9	7.3	---	---	8.3	7.7	8.1	7.3
19	13.4	7.9	9.7	5.2	10.3	7.3	---	---	9.0	7.9	7.7	7.3
20	13.2	7.7	10.4	5.2	10.9	7.4	7.9	6.7	9.6	7.7	7.6	7.3
21	11.9	7.6	10.1	5.9	11.9	7.6	8.3	6.8	9.3	7.7	8.0	7.7
22	10.4	7.5	10.1	5.8	12.4	7.5	7.7	7.2	10.2	7.8	9.0	7.9
23	9.5	8.3	10.1	6.1	13.5	7.4	8.2	7.5	9.7	7.4	9.0	8.1
24	10.3	9.3	10.1	5.7	12.4	6.7	8.2	7.1	9.7	7.5	8.4	7.5
25	10.3	9.2	10.3	6.0	11.3	6.5	7.7	7.2	10.5	8.2	8.9	7.4
26	11.8	9.5	9.7	6.1	10.3	7.1	8.3	7.5	11.0	7.3	9.1	7.3
27	13.5	8.7	10.2	6.4	11.0	7.3	8.7	7.7	11.7	6.9	10.0	7.6
28	13.9	8.4	10.2	6.2	10.3	7.0	9.0	7.8	11.4	6.8	10.5	7.8
29	14.3	9.9	10.7	6.3	10.1	7.0	9.2	7.7	9.4	6.8	11.5	8.2
30	14.9	9.3	10.7	7.3	8.8	8.5	9.9	7.2	10.1	7.0	12.0	8.2
31	---	---	10.1	6.2	---	---	10.2	7.0	9.7	6.7	---	---
MONTH	14.9	7.5	14.5	5.2	13.5	6.5	10.2	6.7	12.4	6.3	12.0	6.4
YEAR	14.9	5.2										

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

04200500 BLACK RIVER AT ELYRIA, OH

LOCATION.--Lat 41°22'49", long 82°06'17", in T.6 N., R.17 W., Lorain County, Hydrologic Unit 04110001, on left bank in Cascade Park at Elyria, 0.8 mi (1.3 km) downstream from confluence of East and West Branches.

DRAINAGE AREA.--396 mi² (1,026 km²).

PERIOD OF RECORD.--October 1944 to current year. Records for May 1903 to July 1906 (published as "near Elyria") published in WSP 97, 129, and 205, are unreliable and should not be used.

REVISED RECORDS.--WSP 1912: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 620.83 ft (189.229 m) above mean sea level.

REMARKS.--Records good except those for winter periods, which are fair. Some regulation at low flow for industrial use. Water-quality data collected at this site 1969 to 1974.

AVERAGE DISCHARGE.--33 years, 318 ft³/s (9.006 m³/s), 10.91 in/yr (277 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,700 ft³/s (1,460 m³/s) July 6, 1969, gage height, 26.4 ft (8.05 m), (from flood mark), from rating curve extended above 13,000 ft³/s (368 m³/s) on basis of slope-area measurement of peak flow; no flow for part of Oct. 10, 1956 (result of temporary storage at dam upstream).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 ft³/s (90.6 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 25	0200	*5620	159	*11.11	3.386	Mar. 19	0400	5140	146	10.59	3.228

Minimum daily discharge, 12 ft³/s (0.34 m³/s) Feb. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	115	39	26	20	649	359	217	21	1530	29	19
2	26	204	36	26	20	406	1080	209	19	1030	29	18
3	23	169	32	26	20	345	4110	392	18	266	22	15
4	21	129	31	25	20	462	2730	535	16	228	18	13
5	20	96	26	25	19	1140	1310	1300	21	1090	25	12
6	22	75	25	25	19	967	1290	936	25	660	46	12
7	22	60	24	24	19	528	688	495	35	308	174	108
8	18	55	24	24	19	370	485	288	65	169	92	75
9	43	50	24	24	19	300	369	187	71	169	53	37
10	54	47	23	24	19	267	290	137	44	106	44	30
11	75	49	23	24	19	245	233	109	38	73	47	16
12	69	49	23	24	19	266	192	93	38	53	90	16
13	53	50	23	23	19	1780	159	79	38	44	148	52
14	36	47	23	23	18	2310	133	68	30	75	129	103
15	28	44	23	23	18	972	113	59	24	54	135	167
16	26	42	23	23	480	550	99	54	22	73	92	311
17	21	42	23	23	470	372	85	45	50	81	53	767
18	20	41	24	22	419	2620	82	43	148	38	37	1050
19	18	38	25	22	341	4970	78	39	167	40	67	684
20	29	36	29	22	289	2470	101	35	98	35	76	785
21	29	34	35	22	254	1250	108	32	53	34	84	501
22	28	35	37	22	226	1870	127	28	31	87	56	280
23	31	34	37	22	612	2910	404	26	22	612	159	161
24	52	31	34	21	3790	1590	416	25	18	122	176	106
25	68	29	32	21	5410	830	567	25	56	96	93	75
26	122	37	30	21	3880	517	596	22	115	59	59	59
27	148	32	29	21	1550	380	677	18	60	44	43	47
28	113	32	28	21	1050	944	404	18	64	29	34	42
29	85	36	28	21	---	2400	256	20	56	58	31	37
30	68	38	27	20	---	1410	266	18	541	78	27	33
31	92	---	27	20	---	606	---	19	---	37	22	---
TOTAL	1490	1776	867	710	19058	36696	17807	5571	2004	7378	2190	5631
MEAN	48.1	59.2	28.0	22.9	681	1184	594	180	66.8	238	70.6	188
MAX	148	204	39	26	5410	4970	4110	1300	541	1530	176	1050
MIN	18	29	23	20	18	245	78	18	16	29	18	12
CFSM	.12	.15	.07	.06	1.72	2.99	1.50	.46	.17	.60	.18	.48
IN.	.14	.17	.08	.07	1.79	3.45	1.67	.52	.19	.69	.21	.53

CAL YR 1976 TOTAL 81613 MEAN 223 MAX 5400 MIN 11 CFSM .56 IN 7.67
WTR YR 1977 TOTAL 101178 MEAN 277 MAX 5410 MIN 12 CFSM .70 IN 9.50

04200550 BLACK RIVER BELOW ELYRIA, OH

LOCATION.--Lat 41°24'42", long 82°05'45", in T.6 N., R.17 W., Lorain County, Hydrologic Unit 04110001, at Ford Road bridge on north edge of Elyria, 0.7 mi (1.1 km) downstream from Elyria sewage disposal plant, and 5.2 mi (8.4 km) downstream from discharge station at Elyria.

DRAINAGE AREA.--412 mi² (1,067 km²).

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1966 to current year.
pH: October 1976 to current year.
WATER TEMPERATURES: January 1966 to current year.
DISSOLVED OXYGEN: January 1966 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. Dissolved oxygen concentrations listed as 15.0 mg/L represent concentrations of 15.0 mg/L or higher due to instrument limitations. See records of discharge for station at Elyria (station 04200500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,900 micromhos Feb. 11, 1977; minimum, 117 micromhos Jan. 27, 1976.
pH: Maximum, 8.7 units May 1, 1977; minimum, 7.1 units Oct. 2, 4, 1976.
WATER TEMPERATURES: Maximum, 33.0°C June 7, 1973; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on many days during 1966, 1972, 1973, 1975, 1977; minimum, 0.0 mg/L June 3, 5, 6, July 3, 4, 1966, July 31, Aug. 1, 2, 22, 23, 1974, Aug. 27, 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,900 micromhos Feb. 11; minimum, 255 micromhos July 23.
pH: Maximum, 8.7 units May 1; minimum, 7.1 units Oct. 2, 4.
WATER TEMPERATURES: Maximum, 32.5°C July 20; minimum, 0.0°C Dec. 22.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L Feb. 24; minimum, 0.0 mg/L Aug. 27.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 10...	1045	249	690	8.0	8.5	11.1	95	4.5	250	140	67	19
JUN 14...	0930	25	460	7.6	20.0	4.6	50	6.0	290	97	80	22

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 10...	36	7.7	131	0	107	2.1	130	55	.3	7.6	357	3.5
JUN 14...	75	17	236	0	194	9.5	140	80	.5	2.7	534	.54

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 10...	.07	2.5	.39	2	20	14	20	13	50	.0	30	8.4
JUN 14...	.13	2.8	1.4	5	20	32	100	3	110	.1	40	6.5

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	705	603	861	813	1160	1130	1510	1480	1360	1320	570	501
2	732	675	852	810	1210	1110	1490	1390	1440	1330	627	558
3	750	687	924	852	1280	1210	1470	1400	1450	1360	663	597
4	867	744	924	885	1290	1240	1570	1480	1550	1450	738	666
5	1010	789	945	867	1420	1310	1650	1510	1510	1400	669	555
6	1080	906	930	873	1560	1300	1550	1430	1400	1330	561	543
7	1140	867	897	864	1620	1380	1850	1460	1340	1260	591	537
8	1210	1030	972	843	1650	1490	1850	1600	1300	1240	642	582
9	1220	774	1110	966	1490	1430	1610	1510	1350	1250	684	633
10	1000	804	1120	1020	1520	1440	1530	1420	1850	1370	720	672
11	822	753	1170	1050	1510	1400	1490	1370	2900	1920	744	705
12	795	666	1170	1060	1440	1300	1610	1410	2890	2150	765	738
13	945	783	1210	1110	1330	1270	1630	1590	2130	1800	792	492
14	1040	927	1140	1080	1390	1280	1680	1590	1790	1460	492	441
15	1090	945	1120	1070	1370	1310	1700	1580	1500	1170	549	462
16	1060	957	1120	1050	1360	1300	1610	1440	1160	894	609	552
17	1020	975	---	---	1440	1360	---	---	882	813	648	582
18	1190	1010	1190	1130	1520	1400	---	---	861	819	666	324
19	1210	1070	1210	1120	1460	1360	---	---	840	780	327	303
20	1200	909	1180	1120	1440	1270	---	---	795	783	399	324
21	1300	918	1140	1100	1520	1440	---	---	855	786	480	402
22	1280	1200	1220	1110	1460	1390	---	---	942	855	513	390
23	1210	1130	1260	1220	1470	1440	---	---	918	594	396	354
24	---	---	1290	1220	1480	1440	---	---	567	315	435	393
25	---	---	1270	1110	1460	1350	---	---	315	309	507	435
26	888	846	1150	1090	1430	1340	---	---	---	---	546	504
27	891	837	1130	1060	1470	1360	---	---	444	429	564	540
28	912	846	1130	1030	1370	1290	---	---	504	447	594	483
29	945	903	1110	1030	1540	1340	---	---	---	---	471	408
30	960	900	1140	1090	1580	1460	---	---	---	---	477	426
31	894	801	---	---	1530	1460	---	---	---	---	546	474
MONTH	1300	603	1290	810	1650	1110	1850	1370	2900	309	792	303

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	600	537	645	624	1300	1150	---	---	942	633	1400	1080
2	633	390	675	630	1340	1180	---	---	1020	741	1310	987
3	369	315	702	660	1430	1240	---	---	1210	990	1190	996
4	372	318	657	534	1330	1190	471	423	1360	987	1130	972
5	432	381	522	456	1190	996	489	306	1100	732	1250	1010
6	453	429	510	465	1350	1090	459	357	966	678	1270	1020
7	498	444	528	492	1350	1270	591	462	630	486	1490	753
8	516	486	561	525	1270	1110	600	519	813	561	951	717
9	558	510	666	555	1080	924	633	573	1020	729	1190	876
10	591	552	732	618	1160	1070	666	597	1150	786	1070	843
11	660	585	780	690	1170	1110	795	597	1060	786	1100	891
12	690	645	822	696	1140	1050	969	687	796	585	1240	858
13	741	675	915	822	1040	966	---	---	687	621	1250	762
14	759	687	936	840	1080	933	---	---	696	642	729	576
15	840	726	873	813	1160	990	---	---	771	648	840	522
16	834	753	936	801	1190	1070	---	---	855	723	687	546
17	861	798	984	918	1260	636	---	---	921	747	651	525
18	840	783	1050	927	1040	819	---	---	1060	756	507	411
19	885	825	1120	984	879	729	891	771	1080	834	483	420
20	915	696	1140	996	768	582	1150	822	864	753	495	456
21	843	804	1110	1050	783	627	1100	837	855	573	519	450
22	879	789	1060	1010	891	732	1090	849	735	618	612	522
23	789	633	1070	1030	966	810	756	255	777	675	687	570
24	633	582	1210	1070	1040	864	393	297	729	651	747	612
25	582	519	1350	1170	1080	768	618	375	792	624	759	639
26	597	516	1370	1240	1030	741	759	573	855	714	762	627
27	618	555	1490	1320	828	723	990	699	885	786	981	747
28	609	561	1370	1270	1070	747	1070	792	828	729	1050	810
29	636	567	1300	1240	918	669	1360	534	921	807	1170	891
30	636	612	1320	1220	870	573	681	519	1090	810	1290	957
31	---	---	1490	1160	---	---	711	615	1260	996	---	---
MONTH	915	315	1490	456	1430	573	1360	255	1360	486	1490	411
YEAR	2900	255										

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.7	7.5	8.1	7.8	8.0	7.9	7.8	7.7	7.7	7.6	8.2	8.1
2	7.7	7.1	8.1	7.9	8.0	7.9	7.8	7.7	7.7	7.6	8.2	8.0
3	7.5	7.2	8.1	7.9	8.2	7.9	7.9	7.6	7.7	7.6	8.2	8.1
4	7.7	7.1	8.0	7.8	8.1	7.8	7.7	7.6	7.7	7.7	8.2	8.0
5	7.7	7.5	7.9	7.8	7.8	7.7	7.8	7.6	7.7	7.6	8.2	8.1
6	7.6	7.5	7.8	7.3	7.9	7.7	7.8	7.6	7.8	7.7	8.2	8.1
7	7.6	7.4	7.8	7.5	8.0	7.8	7.8	7.6	7.8	7.7	8.1	8.1
8	7.6	7.5	7.9	7.7	8.0	7.9	7.7	7.6	7.8	7.7	8.2	8.1
9	7.7	7.5	8.2	7.8	8.0	7.8	7.8	7.7	7.8	7.8	8.2	8.1
10	7.8	7.6	7.9	7.8	8.0	7.9	7.7	7.6	8.0	7.8	8.3	7.9
11	7.8	7.5	7.8	7.7	8.0	7.9	7.8	7.6	8.0	7.8	7.9	7.9
12	7.9	7.6	7.9	7.7	8.0	7.9	7.7	7.5	8.0	7.8	7.9	7.6
13	7.9	7.7	7.9	7.8	8.2	7.9	7.7	7.6	8.0	7.9	7.9	7.7
14	8.0	7.8	7.9	7.8	8.1	7.8	7.7	7.6	8.1	8.0	7.7	7.7
15	7.8	7.7	7.9	7.8	8.2	8.0	7.7	7.6	8.1	8.0	7.9	7.7
16	7.8	7.7	7.9	7.8	8.1	8.0	7.7	7.6	8.0	7.9	7.9	7.8
17	7.8	7.7	---	---	8.1	8.0	---	---	7.9	7.8	7.9	7.9
18	7.9	7.7	7.9	7.7	8.0	8.0	---	---	7.9	7.9	7.9	7.6
19	7.9	7.7	7.9	7.7	8.1	7.9	---	---	7.9	7.8	7.6	7.6
20	7.9	7.6	8.0	7.8	8.2	7.8	---	---	7.9	7.9	7.7	7.5
21	8.0	7.7	8.0	7.8	8.0	7.9	---	---	8.1	7.9	7.8	7.7
22	8.0	7.9	7.9	7.8	8.0	7.8	---	---	8.1	8.0	7.9	7.7
23	7.9	7.9	8.0	7.9	8.0	8.0	---	---	8.1	7.8	7.8	7.7
24	---	---	8.0	7.8	8.1	7.9	---	---	7.8	7.5	7.9	7.8
25	---	---	8.0	7.8	8.1	8.0	---	---	7.6	7.5	7.9	7.8
26	7.9	7.9	8.2	7.6	8.1	8.0	---	---	---	---	7.9	7.8
27	8.0	7.9	7.7	7.7	8.1	7.9	---	---	8.0	7.7	8.0	7.9
28	8.2	8.0	7.8	7.7	8.1	7.9	---	---	8.3	8.1	8.0	7.8
29	8.2	7.9	7.9	7.8	8.0	7.8	---	---	---	---	7.8	7.7
30	8.0	7.8	8.0	7.8	7.9	7.8	---	---	---	---	7.8	7.8
31	7.9	7.7	---	---	7.8	7.7	---	---	---	---	8.2	7.8
MONTH	8.2	7.1	8.2	7.3	8.2	7.7	7.9	7.5	8.3	7.5	8.3	7.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.1	7.9	8.7	8.2	7.9	7.5	---	---	7.7	7.5	7.8	7.5
2	8.0	7.8	8.3	7.9	7.5	7.4	---	---	7.8	7.6	7.7	7.6
3	7.8	7.7	8.2	7.9	7.5	7.3	---	---	7.9	7.4	7.8	7.6
4	7.8	7.7	8.0	7.8	7.4	7.2	7.6	7.4	7.6	7.5	7.8	7.6
5	8.0	7.8	8.0	7.8	7.4	7.3	7.7	7.5	7.6	7.4	7.9	7.6
6	8.1	8.0	8.0	7.9	7.6	7.3	7.6	7.5	7.6	7.3	7.9	7.7
7	8.1	8.0	8.0	7.9	7.6	7.4	7.6	7.3	8.0	7.4	8.1	7.7
8	8.1	8.1	8.2	8.0	7.8	7.5	7.5	7.3	7.8	7.6	8.6	7.9
9	8.2	8.1	8.4	8.0	7.8	7.7	7.6	7.3	7.7	7.5	8.4	8.0
10	8.2	8.1	8.3	8.0	7.7	7.6	7.6	7.6	7.8	7.5	8.1	7.5
11	8.2	8.1	8.5	7.9	7.7	7.5	7.7	7.6	7.7	7.5	7.9	7.8
12	8.2	8.0	8.6	8.0	7.8	7.6	7.7	7.5	7.6	7.4	7.9	7.7
13	8.4	7.9	8.5	8.0	7.8	7.7	---	---	7.9	7.5	7.8	7.7
14	8.5	7.9	8.3	7.9	7.8	7.6	---	---	8.0	7.8	7.9	7.6
15	8.4	7.9	8.5	7.8	7.7	7.6	---	---	8.1	7.9	8.0	7.8
16	8.4	8.2	8.5	7.8	7.6	7.4	---	---	7.9	7.8	8.0	7.9
17	8.4	8.1	8.6	7.6	7.4	7.3	---	---	7.9	7.7	8.1	8.0
18	8.4	8.1	8.4	7.6	7.5	7.2	---	---	8.0	7.7	8.0	7.7
19	8.6	8.0	8.3	7.6	8.1	7.5	7.5	7.5	8.0	7.8	7.8	7.6
20	8.6	8.0	7.9	7.7	7.7	7.5	7.8	7.4	8.0	7.8	7.9	7.8
21	8.3	7.8	7.8	7.6	7.5	7.4	7.8	7.4	7.9	7.7	8.0	7.9
22	8.1	7.6	7.7	7.6	7.4	7.3	7.9	7.4	7.9	7.6	8.0	7.8
23	7.9	7.6	7.8	7.5	7.4	7.3	8.0	7.4	8.1	7.6	7.9	7.7
24	7.9	7.8	7.9	7.6	7.5	7.2	7.6	7.5	8.1	7.9	7.8	7.6
25	8.0	7.8	7.9	7.7	7.5	7.2	7.9	7.5	8.0	7.9	7.8	7.6
26	8.1	7.9	8.0	7.8	7.7	7.2	7.6	7.5	7.9	7.7	7.7	7.6
27	8.2	8.0	8.0	7.8	7.8	7.6	7.7	7.5	7.9	7.6	7.7	7.6
28	8.1	8.0	7.9	7.7	7.5	7.3	7.6	7.5	7.9	7.6	7.8	7.7
29	8.2	8.0	7.8	7.6	7.5	7.3	7.6	7.4	7.8	7.6	7.8	7.7
30	8.4	8.0	8.1	7.6	7.6	7.3	7.6	7.4	7.9	7.6	7.8	7.7
31	---	---	8.2	7.7	---	---	7.7	7.5	7.8	7.6	---	---
MONTH	8.6	7.6	8.7	7.5	8.1	7.2	8.0	7.3	8.1	7.3	8.6	7.5
YEAR	8.7	7.1										

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	14.0	8.0	5.5	3.5	1.0	3.0	1.0	5.0	4.5	2.5	1.5
2	18.0	14.0	7.0	5.5	3.0	1.0	3.5	1.0	5.5	3.0	3.0	1.0
3	19.0	15.5	7.5	6.0	3.5	1.0	4.0	1.5	5.5	3.0	3.5	2.0
4	19.5	15.0	7.0	5.5	4.0	1.5	4.0	1.5	5.5	3.0	5.0	3.5
5	20.5	16.0	7.0	5.5	3.5	1.0	4.0	1.5	4.5	2.5	4.5	4.0
6	19.0	18.0	7.5	4.5	6.0	1.5	4.0	1.5	4.5	2.0	5.0	3.5
7	17.5	16.0	7.0	5.0	5.0	1.5	4.0	1.5	5.5	2.0	5.0	4.0
8	16.5	14.5	6.0	3.5	3.0	1.0	4.0	1.5	5.5	2.0	6.0	4.0
9	15.5	13.0	7.0	3.0	3.5	1.0	4.0	1.5	5.0	3.0	8.0	5.0
10	14.5	12.5	7.0	4.5	3.5	1.5	4.0	1.5	5.5	2.5	9.5	7.0
11	15.0	12.5	7.0	5.0	3.5	1.0	3.5	1.0	5.5	3.0	11.5	8.0
12	15.0	12.0	6.0	4.0	3.5	1.0	4.5	1.5	4.0	2.5	11.5	9.5
13	17.0	14.0	6.5	3.5	3.5	1.0	4.0	1.5	2.5	2.0	11.0	10.5
14	15.5	12.5	6.0	2.5	3.5	1.5	4.5	2.5	2.0	1.5	10.5	10.0
15	16.0	12.5	6.0	2.5	3.5	1.0	4.5	2.0	2.0	1.5	11.5	9.5
16	15.0	11.5	4.5	2.0	4.0	1.5	3.5	1.0	2.0	1.5	11.5	10.5
17	13.5	11.5	---	---	4.0	2.0	---	---	2.0	1.5	11.0	9.5
18	13.0	10.0	7.0	5.0	4.5	2.0	---	---	1.5	1.5	9.0	5.0
19	13.0	9.5	8.0	5.0	5.5	1.5	---	---	1.5	1.5	5.5	4.5
20	13.5	10.5	7.0	4.0	6.5	3.0	---	---	1.5	1.5	6.0	5.0
21	11.5	9.5	6.5	4.0	2.5	0.5	---	---	2.0	1.5	6.0	4.5
22	11.0	8.0	5.5	3.0	2.5	0.0	---	---	2.5	1.5	6.0	4.5
23	9.5	7.0	5.5	2.5	2.5	1.0	---	---	2.0	1.0	5.0	3.5
24	---	---	5.5	2.0	2.5	0.5	---	---	5.5	1.5	5.0	4.0
25	---	---	6.5	2.5	2.0	1.0	---	---	3.5	1.5	5.5	4.0
26	9.0	7.5	9.0	5.5	2.5	1.0	---	---	---	---	6.5	4.5
27	8.0	7.0	9.5	7.5	2.5	0.5	---	---	2.0	2.0	8.0	6.0
28	8.0	6.0	7.5	5.5	3.0	1.0	---	---	2.0	1.5	10.5	8.0
29	8.5	5.5	5.0	2.5	3.0	0.5	---	---	---	---	13.0	10.5
30	8.5	6.0	3.5	0.5	3.0	1.0	---	---	---	---	15.5	13.0
31	8.5	7.0	---	---	2.5	0.5	---	---	---	---	15.0	12.5
MONTH	20.5	5.5	9.5	0.5	6.5	0.0	4.5	1.0	5.5	1.0	15.5	1.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.5	11.5	16.5	12.5	22.0	20.0	---	---	28.0	24.5	27.0	23.5
2	13.0	12.0	15.0	14.5	20.0	17.0	---	---	28.0	22.5	26.5	23.5
3	13.5	12.5	16.0	14.0	21.5	14.5	---	---	27.5	23.5	25.0	22.5
4	13.0	12.5	15.5	15.0	22.5	16.5	25.0	23.5	28.0	24.0	24.5	20.0
5	12.0	10.0	17.0	14.5	20.5	19.0	24.0	23.0	28.0	23.5	25.5	21.5
6	10.0	8.5	18.0	17.0	19.5	16.5	27.0	23.5	26.5	24.5	24.0	22.0
7	8.5	7.5	18.5	16.5	19.5	14.5	29.0	26.0	25.5	24.0	23.0	19.0
8	8.0	6.0	18.5	15.0	18.0	15.0	28.5	26.0	25.5	23.5	23.0	18.5
9	8.5	5.5	15.5	13.0	21.0	16.0	28.0	25.5	26.0	23.5	24.5	20.0
10	10.5	6.5	16.5	12.0	22.0	15.5	28.0	24.0	26.0	24.0	23.5	20.0
11	14.5	9.0	18.0	12.5	20.0	17.0	27.0	23.5	28.0	24.0	21.5	18.0
12	17.5	12.0	16.0	13.5	18.5	17.5	---	---	27.0	22.5	20.5	17.0
13	19.0	14.5	20.0	14.5	21.5	16.0	---	---	24.5	23.0	20.0	18.0
14	19.0	15.0	21.0	16.0	24.0	19.0	---	---	26.0	23.5	19.5	18.0
15	18.0	14.0	21.5	15.5	25.0	19.0	---	---	25.5	22.0	18.0	16.0
16	16.0	14.5	22.5	15.5	25.5	20.5	---	---	24.5	22.0	18.0	16.5
17	17.5	14.5	23.0	18.5	26.0	22.5	---	---	26.0	23.0	18.0	17.0
18	17.5	14.5	24.5	20.0	26.0	22.0	---	---	24.5	21.0	18.5	17.0
19	19.5	15.5	25.5	21.0	26.0	22.5	30.0	26.5	22.5	19.5	19.5	18.0
20	21.0	17.0	27.0	21.0	24.0	20.5	32.5	27.0	23.0	19.0	19.0	18.0
21	20.5	17.5	27.5	21.5	25.0	20.0	30.5	27.5	21.5	19.5	18.0	16.5
22	18.5	17.0	27.0	22.0	25.0	19.5	30.0	25.5	23.5	19.5	18.0	16.0
23	17.0	14.5	25.0	22.5	25.0	19.5	27.0	23.0	23.0	20.0	19.5	16.5
24	14.0	13.0	26.5	22.0	25.0	21.0	26.5	22.0	22.0	20.5	19.0	17.5
25	13.0	11.5	27.5	22.0	27.5	21.5	26.5	24.0	23.0	18.5	21.0	17.5
26	13.0	11.0	26.0	21.5	27.5	22.5	26.5	22.5	24.0	17.5	20.5	18.5
27	13.5	12.0	25.0	19.5	26.5	21.5	26.5	21.5	26.5	21.5	20.0	17.0
28	13.5	10.5	25.5	19.5	26.5	23.0	27.0	21.0	28.0	23.5	19.0	17.0
29	13.5	9.5	23.5	21.0	26.0	22.0	26.5	24.0	25.5	23.5	18.5	15.5
30	15.0	10.5	22.5	19.0	23.0	22.0	27.5	23.0	25.0	22.0	19.5	16.0
31	---	---	24.0	18.5	---	---	28.5	23.5	26.5	21.5	---	---
MONTH	21.0	5.5	27.5	12.0	27.5	14.5	32.5	21.0	28.0	17.5	27.0	15.5
YEAR	32.5	0.0										

04200550 BLACK RIVER BELOW ELYRIA, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	6.5	5.5	9.7	8.6	9.3	8.9	10.8	9.7	9.3	8.6	10.2	9.4
2	6.3	5.3	9.8	8.9	9.5	8.9	11.5	10.9	9.2	8.4	10.5	10.1
3	6.3	5.4	9.9	8.9	10.3	8.9	11.3	10.7	9.3	8.2	10.8	10.3
4	6.3	5.2	9.9	9.1	9.9	9.6	10.8	10.5	8.6	7.9	10.4	9.9
5	5.2	4.1	9.6	8.8	10.3	9.8	10.5	10.0	8.7	7.9	10.5	10.1
6	4.6	3.1	9.5	8.7	10.4	9.8	10.2	9.7	9.2	8.4	10.6	10.2
7	5.4	3.9	9.2	8.9	10.7	9.7	9.7	9.1	9.7	8.7	10.3	10.2
8	5.4	4.7	9.6	9.0	10.9	10.1	9.9	9.2	9.7	9.0	10.4	10.0
9	6.6	3.0	9.5	8.7	11.0	10.3	10.1	9.5	9.4	8.6	10.0	9.3
10	7.8	6.8	9.0	8.4	10.6	10.0	10.0	9.5	9.2	8.2	11.0	9.3
11	8.0	6.9	9.0	8.5	11.1	10.0	10.2	9.6	10.1	8.6	10.5	10.0
12	7.8	6.2	9.1	8.6	11.0	10.5	9.8	9.1	10.8	9.4	10.1	9.5
13	6.1	5.8	9.3	8.7	11.4	10.5	9.8	9.2	11.3	10.9	10.9	9.7
14	6.2	5.0	9.8	9.0	11.2	10.3	9.5	9.0	12.2	11.4	11.1	10.9
15	5.5	4.7	9.6	9.0	10.8	10.0	9.1	8.6	13.0	12.2	11.0	10.4
16	7.0	4.7	9.6	9.1	11.1	10.0	9.4	8.8	13.5	13.1	10.7	10.4
17	7.0	5.8	---	---	10.8	10.1	---	---	13.7	13.5	10.8	10.4
18	7.2	6.3	8.8	8.0	11.2	10.1	---	---	13.8	13.5	13.2	10.5
19	6.5	5.7	8.3	7.8	11.5	10.3	---	---	14.0	13.7	13.4	13.1
20	6.5	5.5	8.5	7.8	10.8	9.4	---	---	14.1	13.9	13.1	12.5
21	7.0	6.4	8.7	7.9	11.8	10.6	---	---	14.2	13.8	12.6	11.9
22	8.0	6.6	8.9	8.1	12.5	11.5	---	---	13.8	13.2	13.0	11.8
23	7.7	7.4	9.0	8.4	12.7	11.9	---	---	14.4	13.5	13.3	12.9
24	---	---	8.9	8.4	12.8	12.3	---	---	15.0	11.0	13.0	12.6
25	---	---	8.8	8.1	13.3	12.4	---	---	14.6	11.0	12.8	12.1
26	9.1	8.9	8.0	6.6	13.1	12.8	---	---	---	---	12.3	11.6
27	9.5	8.9	7.5	6.7	13.0	12.4	---	---	9.8	9.5	11.8	11.2
28	9.7	8.7	8.0	6.9	12.9	12.2	---	---	9.9	9.8	11.2	10.7
29	9.2	8.3	9.5	8.0	11.9	10.1	---	---	---	---	10.9	10.4
30	8.6	7.7	9.8	9.1	10.4	9.9	---	---	---	---	10.5	9.3
31	8.6	7.7	---	---	10.2	9.8	---	---	---	---	9.8	9.4
MONTH	9.7	3.0	9.9	6.7	13.3	8.9	11.5	8.6	15.0	7.9	13.4	9.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.1	9.7	11.1	8.6	6.6	4.5	---	---	7.3	4.9	6.6	2.1
2	10.4	9.5	8.6	7.4	4.1	2.8	---	---	6.6	4.2	5.9	0.9
3	11.1	10.5	9.8	7.7	4.2	1.7	---	---	7.1	3.9	7.6	1.0
4	11.0	10.5	8.3	7.7	---	---	7.9	7.5	7.1	3.9	6.8	3.6
5	11.0	10.4	9.3	8.4	---	---	8.9	7.2	7.3	3.1	7.5	3.0
6	11.5	11.1	8.9	8.2	---	---	8.7	7.1	6.4	3.0	6.5	3.5
7	11.7	11.3	9.0	8.1	---	---	7.2	3.7	7.8	4.6	7.1	2.4
8	11.9	11.3	9.6	8.3	8.2	5.0	6.4	4.9	6.9	4.8	10.2	5.7
9	12.1	11.6	10.3	8.4	8.9	5.4	6.0	5.1	6.4	4.5	11.9	4.9
10	11.6	10.8	10.6	8.0	7.8	5.6	6.5	6.2	5.6	4.0	7.9	3.2
11	10.9	9.6	11.0	7.4	8.2	4.8	6.5	4.1	5.5	1.8	6.7	4.5
12	10.1	8.7	10.9	6.8	8.1	5.5	---	---	6.5	3.8	6.2	4.9
13	10.3	8.0	9.8	5.2	8.4	5.0	---	---	6.9	3.9	5.7	3.0
14	10.8	7.9	8.4	4.6	---	---	---	---	7.6	6.3	7.5	4.5
15	10.7	7.8	9.5	5.1	---	---	---	---	7.5	6.1	7.7	5.5
16	10.9	7.6	11.4	4.8	---	---	---	---	6.6	5.5	7.8	7.0
17	10.7	7.6	12.5	4.5	---	---	---	---	7.1	5.3	8.7	7.4
18	11.1	7.6	10.9	3.8	---	---	---	---	7.1	5.1	9.4	8.3
19	12.0	6.8	10.0	2.9	---	---	8.6	3.5	8.1	5.0	8.6	7.6
20	12.8	6.2	8.5	2.8	6.9	5.1	7.6	3.8	8.2	5.7	8.5	7.6
21	9.3	5.8	---	---	6.4	5.2	8.5	1.1	7.6	4.3	8.5	8.0
22	---	---	---	---	6.0	4.6	8.4	4.2	7.1	5.7	8.3	7.3
23	---	---	---	---	5.5	4.3	8.6	5.3	7.2	5.0	8.6	7.2
24	8.0	7.4	---	---	5.1	2.4	8.2	7.2	7.3	6.4	8.1	7.5
25	9.3	7.2	---	---	4.4	2.4	7.5	6.0	7.1	5.4	7.6	7.2
26	9.6	9.0	---	---	7.4	3.1	6.9	5.5	5.5	1.0	7.3	6.7
27	9.8	8.8	---	---	8.3	5.7	7.3	6.0	7.7	.0	6.9	6.3
28	9.5	8.7	---	---	5.7	0.1	6.9	5.4	8.0	4.3	7.0	5.9
29	10.2	9.2	---	---	5.5	1.4	5.5	1.3	7.2	3.7	6.9	5.2
30	10.6	8.9	---	---	7.6	3.5	6.4	4.8	7.7	4.3	5.6	4.8
31	---	---	---	---	---	---	7.4	5.3	7.1	2.2	---	---
MONTH	12.8	5.8	12.5	2.8	8.9	0.1	8.9	1.1	8.2	.0	11.9	0.9
YEAR	15.0	.0										

04201500 ROCKY RIVER NEAR BEREA, OH

LOCATION.--Lat 41°24'24", long 81°53'14", in T.6 N., R.15 W., Cuyahoga County, Hydrologic Unit 04110001, on right bank at downstream side of Cedar Point Road Bridge in Rocky River Reservation, just downstream from confluence of East and West Branches, and 3.0 mi (4.8 km) northwest of Berea.

DRAINAGE AREA.--267 mi² (692 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1935, September 1943 to current year. Monthly discharge only for October 1923, published in WSP 1307.

REVISED RECORDS.--WSP 1437: 1924, 1925(M), 1926, 1927(M), 1928-29, 1930-35(M), 1945. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 649.90 ft (198.089 m) above mean sea level (Cuyahoga County bench mark). Prior to Sept. 30, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good except those for the winter period, which are fair. Some regulation at low flow by small reservoirs on East Branch.

AVERAGE DISCHARGE.--46 years, 259 ft³/s (7.335 m³/s), 13.18 in/yr (335 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2 ,400 ft³/s (606 m³/s) Jan. 22, 1959, gage height, 14.10 ft (4.298 m), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of contracted-opening measurement of peak flow; maximum gage height, 18.6 ft (5.67 m) June 29, 1924 (backwater caused by tornado); minimum daily discharge, 0.2 ft³/s (0.006 m³/s) Sept. 2, 1932, Aug. 22, 27, 30, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 20.9 ft (6.37 m).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 4,000 ft³/s (120 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 24	1900	*7150	202	*6.53	1.990	Mar. 18	1600	5450	154	5.63	1.716

Minimum daily discharge, 17 ft³/s (0.481 m³/s) May 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	289	44	53	24	363	210	131	23	738	50	22
2	55	170	45	52	24	252	1260	245	19	213	30	23
3	44	113	46	50	24	230	3270	520	22	74	22	39
4	40	92	46	49	23	416	753	574	19	185	22	42
5	38	75	47	48	23	820	1210	986	25	294	36	26
6	37	68	47	46	23	413	666	415	41	104	110	20
7	45	64	47	44	23	279	382	236	65	65	346	19
8	43	66	48	43	23	222	277	162	41	121	149	22
9	96	78	49	41	22	197	213	128	101	95	70	21
10	210	92	49	40	22	184	181	104	126	52	57	20
11	135	138	49	39	22	160	165	91	57	38	68	21
12	79	127	50	38	22	235	146	84	40	33	378	20
13	60	98	50	37	22	3040	128	77	33	35	221	44
14	47	81	51	36	22	922	119	70	29	30	463	299
15	44	71	51	35	22	504	118	58	27	26	157	193
16	40	66	51	34	22	323	101	59	24	24	71	511
17	37	60	52	33	310	219	86	54	49	67	64	1130
18	35	58	52	32	280	3240	82	53	607	161	101	363
19	40	51	53	32	230	2660	85	51	228	103	51	359
20	64	50	53	31	190	1020	106	53	89	99	37	202
21	108	53	53	30	160	883	109	35	53	66	46	133
22	98	47	53	29	135	1340	140	[illegible]	40	52	520	97
23	70	44	54	28	1200	1260	504	37	32	39	175	76
24	103	43	54	27	5200	790	770	34	28	26	80	63
25	207	41	54	27	4180	415	705	35	42	142	51	54
26	167	41	55	26	1100	286	720	32	39	117	41	46
27	129	42	55	26	815	221	440	28	32	56	34	44
28	108	42	55	25	648	825	229	23	34	32	30	40
29	92	43	56	25	---	1410	203	22	209	61	27	37
30	75	44	55	24	---	532	163	17	252	96	26	37
31	161	---	54	24	---	298	---	19	---	35	24	---
TOTAL	2573	2339	1578	1104	14811	23959	13549	4468	2426	3279	3557	4023
MEAN	83.0	78.0	50.9	35.6	529	773	452	144	80.9	106	115	134
MAX	210	289	56	53	5200	3240	3270	986	607	738	520	1130
MIN	35	41	44	24	22	160	82	17	19	24	22	19
CFSM	.31	.29	.19	.13	1.98	2.90	1.69	.54	.30	.40	.43	.50
IN.	.36	.33	.22	.15	2.06	3.34	1.89	.62	.34	.46	.50	.56

CAL YR 1976 TOTAL 73239 MEAN 200 MAX 2700 MIN 16 CFSM .75 IN 10.20
WTR YR 1977 TOTAL 77666 MEAN 213 MAX 5200 MIN 17 CFSM .80 IN 10.82

04201500 ROCKY RIVER NEAR BEREA, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
10...	1245	192	810	8.2	11.5	11.3	103	3.4	250	130	68	19
JUN												
15...	1300	26	860	8.5	25.0	11.6	140	5.6	230	88	62	18

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
10...	68	4.4	146	0	120	1.5	110	120	.2	6.7	488	1.5
JUN												
15...	80	8.0	160	0	141	.9	110	110	.3	2.8	476	1.2

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
10...	.05	.73	.36	1	10	9	0	7	130	.0	20	8.2
JUN												
15...	.37	2.3	2.0	3	10	5	80	3	100	.0	30	7.5

SEDIMENT ANALYSES

PERIOD OF RECORD.--1969 to current year.

REMARKS.--Sediment sampling site at bridge 2,400 ft (732 m) downstream from discharge station.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM
FEB											
24...	0615	3960	1120	12000	60	71	75	86	93	97	100
MAR											
29...	0915	1670	246	1110	52	62	72	85	93	98	100

04201500 ROCKY RIVER NEAR BEREA, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	31	24	---	---	3	0.43	---	---	52	51
2	---	---	31	14	---	---	2	0.28	---	---	38	26
3	---	---	30	9.2	---	---	2	0.27	---	---	25	16
4	---	---	30	7.5	---	---	3	0.39	---	---	26	29
5	---	---	28	5.7	---	---	3	0.38	---	---	---	---
6	---	---	23	4.2	---	---	3	0.37	---	---	---	---
7	---	---	18	3.1	---	---	---	---	---	---	30	23
8	---	---	13	2.3	---	---	---	---	---	---	23	14
9	---	---	10	1.9	---	---	---	---	---	---	22	12
10	---	---	7	1.7	---	---	---	---	---	---	22	11
11	---	---	5	1.9	---	---	---	---	---	---	22	9.5
12	---	---	---	---	---	---	---	---	32	1.9	---	---
13	---	---	---	---	---	---	---	---	30	1.8	---	---
14	---	---	---	---	---	---	---	---	28	1.7	165	411
15	---	---	---	---	---	---	---	---	23	1.4	97	132
16	---	---	---	---	---	---	---	---	20	1.2	56	49
17	---	---	---	---	---	---	---	---	17	14	32	19
18	---	---	---	---	---	---	---	---	15	11	---	---
19	---	---	---	---	---	---	---	---	34	21	---	---
20	---	---	---	---	19	2.7	---	---	7	3.6	---	---
21	---	---	---	---	18	2.6	---	---	13	5.6	94	224
22	---	---	---	---	16	2.3	---	---	15	5.5	---	---
23	---	---	---	---	15	2.2	---	---	397	1660	---	---
24	---	---	---	---	13	1.9	---	---	1180	16600	---	---
25	38	21	---	---	12	1.7	---	---	465	6070	---	---
26	39	18	---	---	9	1.3	---	---	175	520	---	---
27	39	14	---	---	7	1.0	---	---	95	209	---	---
28	40	12	---	---	6	0.89	---	---	69	121	122	355
29	38	9.4	---	---	5	0.76	---	---	---	---	196	812
30	36	7.3	---	---	5	0.74	---	---	---	---	53	76
31	34	15	---	---	4	0.58	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	24	8.5	10	0.62	---	---	54	7.3	---	---
2	---	---	32	21	10	0.51	---	---	38	3.1	---	---
3	---	---	54	76	10	0.59	---	---	32	1.9	---	---
4	130	264	62	96	10	0.51	---	---	---	---	---	---
5	184	601	90	240	10	0.60	---	---	---	---	---	---
6	73	131	33	37	10	1.1	133	37	---	---	---	---
7	47	48	12	7.6	12	2.1	89	16	---	---	---	---
8	37	28	12	5.2	13	1.4	69	23	---	---	---	---
9	32	18	12	4.1	28	7.6	54	14	---	---	---	---
10	29	14	10	2.8	---	---	43	6.0	---	---	---	---
11	25	11	8	2.0	---	---	39	4.0	---	---	---	---
12	19	7.5	7	1.6	---	---	---	---	---	---	---	---
13	13	4.5	8	1.7	---	---	---	---	---	---	---	---
14	6	1.9	10	1.9	---	---	---	---	---	---	---	---
15	6	1.9	12	1.9	---	---	---	---	---	---	---	---
16	7	1.9	12	1.9	---	---	---	---	---	---	---	---
17	8	1.9	12	1.7	---	---	---	---	40	6.9	---	---
18	7	1.5	12	1.7	---	---	---	---	---	---	---	---
19	6	1.4	11	1.5	---	---	---	---	---	---	---	---
20	5	1.4	9	1.3	---	---	43	11	---	---	---	---
21	5	1.5	10	0.94	---	---	39	6.9	---	---	---	---
22	5	1.9	10	0.94	---	---	39	5.5	---	---	---	---
23	---	---	9	0.90	---	---	38	4.0	---	---	---	---
24	---	---	9	0.83	---	---	36	2.5	---	---	---	---
25	---	---	8	0.76	---	---	---	---	---	---	---	---
26	45	87	8	0.69	---	---	---	---	---	---	9	1.1
27	40	48	10	0.76	---	---	---	---	---	---	10	1.2
28	37	23	10	0.62	---	---	---	---	---	---	7	0.76
29	33	18	10	0.59	---	---	---	---	---	---	4	0.40
30	29	13	10	0.46	---	---	137	36	---	---	4	0.40
31	---	---	10	0.51	---	---	82	7.7	---	---	---	---
TOTAL	---	---	---	523.40	---	---	---	---	---	---	---	---

04202000 CUYAHOGA RIVER AT HIRAM RAPIDS, OH

LOCATION.--Lat 41°20'26", long 81°10'01", in T.5 N., R.7 W., Portage County, Hydrologic Unit 04110002, on left bank at downstream side of bridge on Winchell Road at Hiram Rapids, 0.6 mi (1.0 km) downstream from Black Brook.

DRAINAGE AREA.--151 mi² (391 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1927 to December 1935 (published as "near Hiram"), October 1944 to current year.

REVISED RECORDS.--WSP 1054: 1945. WSP 1437: 1931. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,087.46 ft (331.458 m) above mean sea level, unadjusted. Prior to Aug. 26, 1927, nonrecording gage and Aug. 26, 1927, to Dec. 31, 1935, water-stage recorder, at site 2.8 mi (4.5 km) downstream at different datum. Oct. 20, 1944, to Oct. 22, 1946, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by East Branch Reservoir, usable capacity, 4,140 acre-ft (5.10 hm³), 14.6 mi (23.5 km) upstream since 1939 and by LaDue Reservoir, usable capacity, 18,110 acre-ft (22.3 hm³), 9.8 mi (15.8 km) upstream since 1961.

AVERAGE DISCHARGE.--41 years, 202 ft³/s (5.721 m³/s), 18.17 in/yr (462 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft³/s (104 m³/s) Jan. 23, 1959, gage height, 8.11 ft (2.472 m), from rating curve extended above 2,600 ft³/s (73.6 m³/s); minimum daily, 6.6 ft³/s (0.19 m³/s) Sept. 10, 1933.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,360 ft³/s (38.5 m³/s) Feb. 27, gage height, 4.90 ft (1.494 m); minimum daily, 25 ft³/s (0.71 m³/s) July 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	272	190	128	130	100	1090	571	317	50	113	64	41
2	238	170	112	120	100	908	527	262	56	131	60	38
3	198	160	100	120	100	747	679	231	56	142	56	45
4	155	153	90	120	100	641	809	224	55	134	54	50
5	113	140	85	120	100	628	876	239	54	114	53	49
6	82	129	85	110	100	679	833	259	57	74	79	46
7	76	126	99	110	100	691	744	258	72	47	113	44
8	65	117	121	110	100	614	664	233	80	51	112	42
9	70	112	125	110	120	500	584	201	89	73	100	41
10	75	117	120	110	160	410	511	164	100	84	93	47
11	85	118	130	100	173	354	430	133	100	85	105	43
12	100	120	140	100	187	322	358	101	89	82	132	41
13	100	122	162	100	211	485	299	81	77	101	170	46
14	100	124	210	100	220	715	252	73	58	92	305	87
15	110	121	125	100	234	835	206	71	44	70	420	110
16	110	115	117	100	255	763	167	65	35	51	418	131
17	100	108	114	100	294	637	135	59	29	41	366	166
18	95	112	111	100	283	565	117	57	28	40	301	186
19	95	114	108	100	230	650	114	52	40	51	240	208
20	100	110	133	100	214	755	111	47	49	71	193	226
21	100	105	170	100	205	843	109	54	43	69	159	226
22	110	101	216	100	202	899	109	61	42	59	166	216
23	130	105	245	100	172	971	150	61	46	46	156	202
24	160	103	278	100	435	980	253	65	44	36	149	183
25	150	100	291	100	811	879	425	77	43	43	136	163
26	150	109	214	100	1190	753	595	74	42	38	119	143
27	160	137	190	100	1340	614	606	66	42	29	102	133
28	170	148	174	100	1210	527	559	57	42	25	86	130
29	170	147	150	100	---	540	477	51	49	26	68	131
30	190	139	140	100	---	635	396	48	83	47	51	126
31	230	---	130	100	---	664	---	46	---	50	43	---
TOTAL	4059	3772	4613	3260	8946	21294	12666	3787	1694	2115	4669	3340
MEAN	131	126	149	105	320	687	422	122	56.5	68.2	151	111
MAX	272	190	291	130	1340	1090	876	317	100	142	420	226
MIN	65	100	85	100	100	322	109	46	28	25	43	38
MEAN+	131	125	149	105	321	686	422	122	56.4	68.5	151	111
CFSM+	0.87	0.83	0.99	0.70	2.13	4.54	2.79	0.81	0.37	0.45	1.00	0.74
IN.+	1.00	0.93	1.14	0.80	2.21	5.23	3.12	0.93	0.42	0.52	1.15	0.82

CAL YR 1976 TOTAL 92702 MEAN 253 MAX 3250 MIN 26 MEAN+ 253 CFSM+ 1.68 IN.+ 22.80
WTR YR 1977 TOTAL 74215 MEAN 203 MAX 1340 MIN 25 MEAN+ 203 CFSM+ 1.34 IN.+ 18.26

+ Adjusted for change in contents of East Branch and LaDue Reservoirs.

04202000 CUYAHOGA RIVER AT HIRAM RAPIDS, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND 5 DAY (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)
MAR 17...	0945	625	240	7.1	7.5	8.0	67	2.1	84	39	24	5.8
JUN 28...	1545	43	370	7.8	24.5	7.3	87	3.1	120	28	34	7.8

DATE	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 17...	14	2.5	55	0	45	7.0	26	24	.1	3.5	127	.38
JUN 28...	16	2.0	108	0	89	2.7	28	26	.1	3.5	171	.11

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 17...	.01	.02	.07	1	10	14	130	8	30	.0	60	2.6
JUN 28...	.01	.06	.07	3	<10	25	10	11	140	.0	10	8.8

04204000 LITTLE CUYAHOGA RIVER AT MOGADORE, OH

LOCATION.--Lat 41°03'47", long 81°23'38", in T.1 N., R.10 W., Summit County, Hydrologic Unit 04110002, on left bank at upstream side of bridge on State Highway 532, 500 ft (152 m) downstream from Mogadore Reservoir, 0.8 (1.3 km) upstream from Wingfoot Lake Outlet, and 0.8 mi (1.3 km) north of Mogadore.

DRAINAGE AREA.--17.3 mi^2 (44.8 km^2), includes unnamed tributary 0.2 mi (0.3 km) downstream.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1946 to current year.

REVISED RECORDS.--WSP 1912: Drainage area. WRD Ohio 1970: 1969.

GAGE.--Water-stage recorder. Datum of gage is 1,058.74 ft (322.704 m) above mean sea level, unadjusted.

REMARKS.--Records fair. Flow regulated by Mogadore Reservoir, usable capacity, 6,540 acre-ft (8.06 hm^3).

AVERAGE DISCHARGE.--31 years, 14.4 ft^3/s (0.408 m^3/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 276 ft^3/s (7.82 m^3/s) July 11, 1976, gage height, 5.34 ft (1.628 m), from rating curve extended above 92 ft^3/s (2.61 m^3/s) by computation of peak flow over dam; minimum daily, 0.10 ft^3/s (0.003 m^3/s) Oct. 29-31, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 123 ft^3/s (3.48 m^3/s) Mar. 18, gage height, 3.99 ft (1.216 m) from rating curve extended as explained above; minimum daily, 2.4 ft^3/s (0.068 m^3/s) June 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	16	9.0	9.0	9.0	28	25	18	3.7	9.4	9.7	8.4
2	8.4	13	9.4	9.0	9.0	26	72	20	2.8	7.4	9.0	7.8
3	7.8	11	8.7	9.0	9.0	26	72	23	2.6	6.2	8.7	8.7
4	7.4	4.7	8.7	9.0	9.0	26	65	21	2.4	4.9	8.4	6.8
5	7.4	8.4	8.7	9.0	9.0	25	67	25	2.8	4.4	8.4	6.2
6	7.1	11	8.7	9.0	9.0	24	53	22	4.7	4.2	9.7	6.8
7	7.8	10	16	9.0	9.0	23	46	21	4.2	4.9	26	6.5
8	7.1	12	13	9.0	9.0	23	40	20	3.4	11	19	6.5
9	8.7	12	12	9.0	9.0	23	35	17	5.7	11	18	6.2
10	10	13	12	9.0	9.0	22	31	16	5.2	11	21	6.0
11	8.4	12	12	9.0	9.0	21	26	15	6.2	11	22	5.5
12	8.1	12	12	9.0	9.0	23	22	14	3.2	12	23	4.9
13	7.8	11	11	9.0	9.4	56	24	14	2.6	14	21	6.5
14	7.1	11	10	9.0	15	39	23	13	2.6	5.2	20	13
15	6.8	10	11	9.0	15	34	22	13	2.8	5.2	18	9.7
16	6.0	10	11	9.0	14	30	21	12	2.6	6.2	18	15
17	6.0	10	11	9.0	14	26	20	11	2.8	9.4	25	19
18	5.7	10	10	9.0	14	73	19	11	6.0	11	21	14
19	5.7	9.7	10	9.0	14	54	19	10	4.2	14	20	13
20	6.0	9.4	13	9.0	14	58	18	9.4	4.2	13	18	12
21	7.4	9.4	12	9.0	14	49	18	4.9	4.4	12	19	11
22	6.0	9.4	12	9.0	14	50	18	4.4	3.9	13	23	10
23	5.7	9.0	10	9.0	22	43	23	4.7	3.7	12	19	9.7
24	12	8.7	9.5	9.0	37	38	23	6.0	3.7	11	19	11
25	15	8.7	9.5	9.0	36	33	22	7.1	4.4	11	17	15
26	8.7	10	11	9.0	32	28	21	6.5	4.4	11	15	12
27	4.7	11	11	9.0	33	25	20	6.0	4.7	9.7	14	11
28	7.8	10	9.5	9.0	31	33	19	5.7	5.7	9.4	13	10
29	9.4	11	9.0	9.0	---	35	19	6.5	12	9.0	11	9.4
30	9.4	9.7	9.0	9.0	---	30	18	4.4	6.5	11	10	9.0
31	15	---	9.0	9.0	---	28	---	8.4	---	9.7	9.7	---
TOTAL	248.8	313.1	328.7	279.0	436.4	1052	921	390.0	128.1	294.2	513.6	290.6
MEAN	8.03	10.4	10.6	9.00	15.6	33.9	30.7	12.6	4.27	9.49	16.6	9.69
MAX	15	16	16	9.0	37	73	72	25	12	14	26	19
MIN	4.7	4.7	8.7	9.0	9.0	21	18	4.4	2.4	4.2	8.4	4.9

CAL YR 1976 TOTAL 7491.5 MEAN 20.5 MAX 200 MIN 1.7
WTR YR 1977 TOTAL 5195.5 MEAN 14.2 MAX 73 MIN 2.4

04206000 LITTLE CUYAHOGA RIVER AT MOGADORE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 15...	1145	34	385	7.9	9.5	11.0	96	2.8	160	62	46	12
JUN 29...	0950	16	400	7.3	22.0	5.5	62	5.1	130	34	36	10

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 15...	14	2.3	125	0	103	2.5	45	26	.1	1.9	209	.36
JUN 29...	28	3.0	110	0	97	9.5	43	41	.1	5.7	225	.67

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 15...	.02	.15	.06	2	10	5	40	3	180	.0	10	5.2
JUN 29...	.02	.45	.49	5	<10	6	0	11	310	.0	30	3.1

04205700 LITTLE CUYAHOGA RIVER BELOW OHIO CANAL, AT AKRON, OH

LOCATION.--Lat 41°05'40", long 81°31'18", Summit County, Hydrologic Unit 04110002, on right bank 900 ft (274 m) downstream from Ohio Canal and 1.9 mi (3.1 km) upstream from mouth.

DRAINAGE AREA.--59.2 mi^2 (153 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 790.64 ft (240.987 m) above mean sea level. (Levels by the city of Akron).

REMARKS.--Records good. Flow regulated by Mogadore Reservoir 9.7 mi (15.6 km) upstream, usable capacity, 6,540 acre-ft (8.06 hm^3), Wingfoot Lake 12.4 mi (20.0 km) upstream and Springfield Lake 8.8 mi (14.2 km) upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,830 ft^3/s (108 m^3/s) July 11, 1976, gage height, 7.51 ft (2.289 m) from rating curve extended above 800 ft^3/s (22.7 m^3/s) on basis of slope-area measurement at gage height 4.88 ft (1.487 m) and step backwater analysis; minimum daily, 21 ft^3/s (0.59 m^3/s) July 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,690 ft^3/s (76.2 m^3/s) Aug. 10, gage height, 6.15 ft (1.875 m), from rating curve extended as explained above; minimum daily, 21 ft^3/s (0.59 m^3/s) July 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	67	28	30	30	97	85	71	54	99	51	54
2	49	50	26	30	30	88	403	109	41	29	57	75
3	47	52	26	30	30	83	252	119	42	21	53	90
4	44	75	38	30	30	80	156	137	28	141	56	71
5	50	65	23	30	30	75	196	113	44	80	88	67
6	61	65	32	30	31	71	150	105	88	54	151	70
7	61	64	95	30	32	70	125	95	40	140	315	80
8	52	71	47	30	33	71	114	75	28	114	85	80
9	105	65	31	30	35	71	105	61	115	59	75	81
10	79	47	31	30	45	70	99	63	58	58	238	92
11	61	51	43	30	94	67	95	63	54	173	123	81
12	58	55	30	30	116	128	85	62	50	102	123	88
13	58	51	25	30	140	309	83	61	42	81	81	183
14	49	61	25	30	88	132	88	58	38	68	78	206
15	57	49	26	30	55	90	87	56	28	51	76	85
16	65	44	33	30	50	83	89	55	25	158	76	209
17	55	39	36	31	48	70	95	55	78	231	188	148
18	58	34	32	30	48	440	61	45	89	105	81	110
19	58	29	28	30	46	173	63	53	36	105	67	100
20	75	37	50	30	46	192	73	62	26	75	51	88
21	67	61	44	30	46	143	79	59	27	95	145	86
22	92	43	34	30	64	179	90	53	43	74	106	85
23	83	29	32	30	132	140	137	52	58	61	81	78
24	120	27	32	30	340	112	100	83	43	55	92	96
25	71	51	31	30	221	97	105	41	62	66	76	96
26	62	55	33	30	120	90	106	28	63	58	61	80
27	62	50	33	30	140	87	101	29	61	57	57	75
28	68	47	33	30	122	168	102	28	103	57	68	73
29	62	38	31	30	---	131	94	29	166	91	75	71
30	41	27	30	30	---	90	81	27	78	83	70	76
31	150	---	30	30	---	89	---	75	---	44	59	---
TOTAL	2063	1499	1068	931	2242	3786	3499	2022	1708	2685	3003	2874
MEAN	66.5	50.0	34.5	30.0	80.1	122	117	65.2	56.9	86.6	96.9	95.8
MAX	150	75	95	31	340	440	403	137	166	231	315	209
MIN	41	27	23	30	30	67	61	27	25	21	51	54

CAL YR 1976 TOTAL 32754 MEAN 89.5 MAX 728 MIN 23
WTR YR 1977 TOTAL 27380 MEAN 75.0 MAX 440 MIN 21

04205700 LITTLE CUYAHOGA RIVER BELOW OHIO CANAL, AT AKRON, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 15...	0915	93	700	8.2	11.5	10.0	91	3.4	200	88	58	13
JUN 29...	1230	170	1400	8.0	25.0	7.4	88	6.7	220	100	68	13

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 15...	72	3.6	135	0	111	1.4	64	130	.2	5.6	413	.99
JUN 29...	220	5.2	150	0	123	2.4	89	330	.2	4.9	805	.21

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 15...	.21	.20	.11	4	10	17	160	10	100	.0	40	7.1
JUN 29...	.05	1.9	.32	13	10	53	230	45	100	.0	90	17

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH

LOCATION.--Lat 41°08'08", long 81°32'50", Summit County, Hydrologic Unit 04110002, on right bank 230 ft (70 m) upstream from North Portage Path bridge at Old Portage, 1.2 mi (1.9 km) downstream from Little Cuyahoga River, and 4 mi (6 km) northwest of Akron City Hall.

DRAINAGE AREA.--404 mi² (1,046 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to December 1935, March 1939 to current year.

REVISED RECORDS.--WSP 1307: 1924(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 740.11 ft (225.586 m) above mean sea level, unadjusted. Prior to Dec. 21, 1923, nonrecording gage at same site and datum.

REMARKS.--Records good. Natural flow of stream affected by diversions, storage reservoirs and power plants. At Lake Rockwell, 17.7 mi (28.5 km) upstream from gage, an average of 84 ft³/s (2.38 m³/s) was diverted for municipal supply of city of Akron. Sewage from city enters river 2.9 mi (4.7 km) downstream from station. Some diversion from the Tuscarawas drainage into this basin at Portage Lakes (see REMARKS for station 03116000 in volume 1 of this report).

AVERAGE DISCHARGE.--52 years, 416 ft³/s (11.78 m³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,820 ft³/s (221 m³/s) July 11, 1976, gage height, 12.28 ft (3.743 m), from rating curve extended above 3,900 ft³/s (110 m³/s) on basis of contracted-opening estimate at gage height 11.54 ft (3.517 m), at site with drainage area of 488 mi² (1,264 km²) adjusted to gaging station by drainage-area relation; minimum daily, 26 ft³/s (0.736 m³/s) Sept. 2, 1945, July 5, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,520 ft³/s (71.4 m³/s) Aug. 10, gage height, 7.53 ft (2.295 m) from rating curve extended as explained above; minimum daily, 95 ft³/s (2.69 m³/s) May 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	436	370	210	200	142	1750	896	571	164	311	164	148
2	421	340	208	190	142	1420	1480	543	117	159	164	223
3	400	316	178	188	145	1220	1700	536	117	115	159	218
4	337	328	176	184	145	1090	1470	550	157	305	157	173
5	300	305	168	174	143	1000	1630	550	230	262	204	161
6	275	290	172	158	137	889	1600	522	326	218	260	164
7	331	277	302	156	137	884	1370	488	250	285	634	173
8	307	292	230	156	137	888	1170	437	204	287	287	170
9	382	280	204	154	144	797	1010	389	401	189	314	166
10	355	252	210	156	171	693	880	347	260	170	634	175
11	316	260	225	144	261	602	776	308	255	302	488	161
12	300	260	217	140	370	680	676	282	277	245	557	166
13	204	250	217	138	441	1310	641	250	290	208	407	308
14	215	260	200	144	404	1180	567	225	277	189	374	616
15	212	250	204	150	377	1110	452	194	232	164	452	280
16	220	230	200	146	364	1190	413	180	192	275	515	480
17	204	217	196	123	361	1070	404	173	317	443	732	512
18	200	202	186	128	363	1820	365	157	314	314	525	518
19	188	194	178	130	364	1730	225	157	196	285	461	506
20	198	198	227	134	354	1530	201	159	155	260	380	455
21	198	227	247	138	319	1500	201	150	99	287	518	431
22	215	208	206	140	318	1580	220	144	130	290	595	407
23	230	188	210	134	458	1550	326	144	150	242	446	386
24	340	182	242	138	1260	1480	311	208	124	194	377	377
25	322	200	267	142	1840	1390	449	166	216	280	317	386
26	310	220	292	150	1750	1240	644	109	157	285	270	380
27	322	230	275	152	1970	1060	768	103	144	218	232	332
28	343	245	252	148	2090	1060	812	103	255	180	228	314
29	355	252	232	134	---	1020	756	101	410	211	218	297
30	340	232	182	138	---	888	676	95	218	230	187	282
31	487	---	176	141	---	888	---	159	---	159	164	---
TOTAL	9263	7555	6689	4648	15107	36509	23089	8500	6634	7562	11420	9373
MEAN	299	252	216	150	540	1178	770	274	221	244	368	312
MAX	487	370	302	200	2090	1820	1700	571	410	443	732	616
MIN	188	182	168	123	137	602	201	95	99	115	157	148

CAL YR 1976 TOTAL 189640 MEAN 518 MAX 4670 MIN 89
WTR YR 1977 TOTAL 146349 MEAN 401 MAX 2090 MIN 95

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to 1967, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1970 to current year.
pH: October 1970 to current year.
WATER TEMPERATURES: October 1970 to current year.
DISSOLVED OXYGEN: October 1970 to current year.
SUSPENDED SEDIMENT DISCHARGE: March 1972 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Aug. 4, 1977; minimum, 120 micromhos July 20, 1973.
pH: Maximum, 11.4 units Nov. 8, 1974; minimum, 6.2 units July 3, 1973.
WATER TEMPERATURES: Maximum, 34.5°C July 18, 1977; minimum, 0.0°C Jan. 16, 31, Dec. 17, 18, 1972, Jan. 8, 1973.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher Jan. 6-10, Feb. 11, 1973; minimum, 0.0 mg/L July 24, 29, 31, Aug. 1, 3-6, 1977.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 798 mg/L Apr. 2, 1974; minimum daily mean, 1 mg/L Sept. 10, 1973.
SEDIMENT LOADS: Maximum daily, 6,310 tons (5,720 tonnes) Apr. 2, 1974; minimum daily, 0.15 ton (0.14 tonne) Sept. 10, 1973.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Aug. 4; minimum, 321 micromhos Mar. 19, 20.
pH; Maximum, 9.9 units July 7; minimum, 7.0 units July 25, Aug. 16.
WATER TEMPERATURES: Maximum, 34.5°C July 18; minimum, 1.0°C Jan. 17.
DISSOLVED OXYGEN: Maximum, 13.8 mg/L Feb. 28, Mar. 1; minimum, 0.0 mg/L July 24, 29, 31, Aug. 1, 3-6.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 430 mg/L June 9; minimum daily mean, 2 mg/L May 29, 30.
SEDIMENT LOADS: Maximum daily, 1,460 tons (1,320 tonnes) Mar. 18; minimum daily, 0.51 tons (0.46 tonne) May 30.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 14...	1715	1060	425	7.7	8.0	11.0	92	3.5	120	59	35	7.8
JUN 29...	1530	364	1220	8.2	29.0	4.4	56	6.7	240	110	72	15

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 14...	31	3.3	74	0	61	2.4	43	56	.1	5.6	219	.79
JUN 29...	150	4.6	162	0	133	1.6	80	260	.2	6.4	668	.60

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 14...	.03	.28	.11	4	10	18	330	16	90	.0	40	3.3
JUN 29...	.10	1.1	.15	7	10	24	80	7	120	.0	50	21

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM
FEB 24...	1650	1630	233	1030	35	42	51	64	77	82	89	100

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	444	378	504	447	669	573	657	615	828	786	405	345
2	444	408	501	450	639	558	657	639	834	771	405	348
3	435	420	582	453	693	567	693	621	1010	828	477	342
4	486	405	582	486	738	669	690	636	1000	888	459	372
5	507	411	561	474	681	585	690	660	1000	873	450	384
6	543	456	555	468	717	582	723	684	867	840	396	378
7	522	447	534	483	1000	609	807	729	846	825	384	375
8	525	450	774	546	717	678	762	729	855	828	384	375
9	528	447	690	546	717	654	765	720	936	831	402	378
10	504	450	624	555	675	645	792	717	1570	858	408	399
11	600	444	639	549	744	666	792	726	1970	1120	423	408
12	645	459	627	561	681	594	771	741	1480	1110	456	393
13	609	510	624	552	612	579	765	732	1180	1030	495	408
14	594	504	597	561	600	576	873	723	1030	927	429	372
15	696	507	591	525	582	567	831	789	924	780	378	354
16	699	603	615	528	624	564	828	783	777	723	372	345
17	657	600	621	537	648	612	828	792	735	654	369	336
18	696	582	615	543	621	606	816	786	681	633	438	339
19	720	600	627	552	636	591	873	789	693	624	390	321
20	732	621	585	555	729	603	834	798	672	636	393	321
21	702	591	666	588	756	684	840	792	732	630	363	345
22	702	555	621	558	696	660	852	801	714	633	378	342
23	681	555	627	558	711	645	810	795	705	648	360	348
24	636	483	657	585	687	642	840	762	729	582	357	342
25	630	582	738	585	675	603	927	813	573	483	348	339
26	615	564	711	582	672	573	996	852	531	429	375	339
27	621	525	690	579	636	591	927	807	429	384	402	348
28	588	510	633	606	642	594	822	774	378	357	429	372
29	564	480	816	606	630	603	840	810	---	---	423	396
30	492	468	732	621	708	615	807	792	---	---	441	351
31	573	489	---	---	666	621	813	783	---	---	414	390
MONTH	732	378	816	447	1000	558	996	615	1970	357	495	321

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	411	381	444	408	846	594	762	573	2340	1650	2390	1820
2	462	345	465	432	966	810	792	678	2360	996	1850	1100
3	399	336	507	426	921	894	735	684	2520	1580	1750	1150
4	354	333	507	447	906	828	1270	522	3000	1050	1730	1470
5	426	330	513	480	858	656	1340	978	2400	1400	1930	1530
6	375	330	525	504	912	666	1280	780	1820	600	1980	939
7	351	330	525	495	900	864	822	465	1200	387	2170	1490
8	363	339	507	486	867	828	1980	702	1490	1180	2130	1510
9	372	357	510	444	867	618	1860	1290	1740	855	2610	1500
10	390	369	519	495	933	864	2510	1030	1200	333	1900	1450
11	399	375	552	519	960	930	1720	558	660	390	1810	1430
12	417	399	585	549	966	870	1790	876	768	465	1810	1420
13	420	396	609	585	900	867	2080	1170	849	654	2340	816
14	510	402	636	600	900	876	1550	912	1290	828	1380	342
15	495	456	660	636	900	813	1530	1030	1220	597	1220	1050
16	537	471	696	660	891	813	1570	486	822	564	1130	447
17	546	501	723	696	873	498	1190	444	1140	459	1170	603
18	537	444	747	636	873	777	1960	798	789	672	930	592
19	591	450	798	645	909	789	1790	1150	864	636	894	449
20	618	570	807	786	837	783	1740	1160	1240	789	924	576
21	690	609	843	771	855	807	2030	1090	1120	375	1040	892
22	729	645	861	816	957	816	1940	1070	894	573	1010	825
23	699	555	858	822	1590	894	1590	1250	939	591	1150	900
24	678	603	861	540	1800	1090	2120	1330	1220	678	1090	780
25	690	627	840	756	2070	987	2020	726	1020	630	1350	659
26	633	474	789	765	2080	1090	1570	963	1210	873	1120	882
27	471	423	813	780	1150	1000	2040	1150	1590	921	1040	903
28	429	414	798	774	1080	579	2490	1520	1460	1030	1310	930
29	429	411	831	777	1260	477	2220	678	1400	762	1240	1060
30	438	405	801	786	1140	696	2160	804	1930	864	1120	702
31	---	---	819	549	---	---	1910	1460	2570	864	---	---
MONTH	729	330	861	408	2080	477	2510	444	3000	333	2610	342
YEAR	3000	321										

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	7.9	8.1	7.8	7.9	7.6	8.4	8.0	8.0	7.8	7.7	7.7
2	8.2	7.9	8.1	7.6	8.0	7.6	8.4	8.0	8.2	7.7	7.7	7.7
3	8.2	7.9	8.0	7.7	8.1	7.6	8.2	7.9	8.1	7.9	7.8	7.6
4	8.2	7.8	8.0	7.7	7.8	7.6	8.2	7.8	8.2	7.9	8.0	7.7
5	8.2	7.7	8.0	7.7	8.0	7.6	8.2	7.8	8.5	7.9	7.9	7.8
6	8.0	7.5	8.0	7.7	7.9	7.6	8.2	7.7	8.2	7.9	7.8	7.8
7	8.0	7.7	8.0	7.7	8.1	7.6	8.4	7.8	8.3	7.9	8.0	7.8
8	8.0	7.7	8.1	7.8	7.9	7.7	8.3	7.8	8.2	7.9	7.9	7.9
9	7.9	7.7	8.0	7.7	7.9	7.6	8.3	7.9	8.2	7.8	7.9	7.9
10	8.1	7.8	8.0	7.7	7.6	7.6	8.4	7.9	8.1	7.8	7.9	7.8
11	8.0	7.7	---	---	8.1	7.8	8.3	7.9	8.3	7.8	7.9	7.8
12	8.0	7.6	---	---	8.1	7.8	8.2	7.8	8.0	7.9	7.9	7.7
13	7.9	7.5	---	---	8.2	7.9	8.2	7.8	8.0	7.9	7.9	7.9
14	8.1	7.6	---	---	8.2	7.8	8.1	7.8	8.3	8.0	8.1	7.9
15	7.9	7.6	---	---	8.2	7.8	8.1	7.8	8.4	8.0	7.9	7.8
16	7.9	7.7	---	---	8.1	7.8	8.3	7.8	8.2	8.0	7.9	7.8
17	8.0	7.7	---	---	8.1	7.8	8.2	7.9	8.3	8.0	7.9	7.8
18	8.0	7.6	8.0	7.7	8.1	7.8	8.2	7.9	8.2	8.0	7.9	7.8
19	8.0	7.6	8.0	7.6	8.2	7.8	8.1	7.8	8.2	8.0	7.8	7.8
20	7.8	7.4	8.0	7.6	8.5	7.8	8.2	7.8	8.3	8.1	7.8	7.7
21	7.9	7.6	8.0	7.7	8.2	7.9	8.1	7.7	8.2	8.0	7.8	7.8
22	8.0	7.6	8.0	7.7	8.2	7.9	8.1	7.7	8.2	8.0	7.8	7.8
23	7.9	7.7	8.1	7.6	8.2	7.9	8.1	7.8	8.1	8.0	7.8	7.8
24	7.8	7.6	8.1	7.6	8.2	7.9	7.9	7.7	8.1	7.9	7.8	7.8
25	7.9	7.8	8.1	7.6	8.2	7.9	7.9	7.7	8.0	7.9	7.8	7.8
26	7.9	7.7	7.7	7.6	8.2	7.9	8.0	7.7	7.9	7.8	7.9	7.8
27	8.0	7.8	7.8	7.6	8.3	8.0	8.1	7.8	7.8	7.8	7.9	7.8
28	8.0	7.8	7.8	7.6	8.2	7.9	8.1	7.8	7.8	7.7	8.8	7.8
29	8.1	7.8	8.1	7.7	8.4	8.0	8.0	7.8	---	---	8.0	7.8
30	7.9	7.8	8.1	7.7	8.3	7.9	8.0	7.8	---	---	8.1	7.8
31	7.9	7.6	---	---	8.3	7.9	8.0	7.8	---	---	8.1	7.9
MONTH	8.2	7.4	8.1	7.6	8.5	7.6	8.4	7.7	8.5	7.7	8.8	7.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.2	7.9	8.5	8.1	7.8	7.3	8.1	7.6	---	---	7.6	7.5
2	7.9	7.8	8.1	7.9	7.8	7.6	8.1	7.9	---	---	7.5	7.5
3	8.0	7.9	8.4	7.9	8.0	7.7	8.2	7.9	7.4	7.3	7.6	7.5
4	8.7	7.9	8.1	7.9	7.9	7.7	8.0	7.6	7.4	7.3	7.6	7.5
5	8.0	7.8	8.4	8.1	7.8	7.6	7.8	7.7	---	---	7.7	7.5
6	8.0	7.9	8.4	8.1	8.0	7.6	8.1	7.7	---	---	7.6	7.5
7	8.0	7.9	8.5	8.1	8.0	7.8	9.9	7.9	---	---	7.8	7.6
8	8.1	7.9	8.5	8.1	8.1	7.8	8.0	7.8	---	---	7.7	7.5
9	8.1	7.9	8.5	8.1	8.1	7.7	7.9	7.8	---	---	7.7	7.5
10	8.1	7.9	8.6	8.1	8.1	7.8	7.9	7.8	---	---	7.6	7.5
11	8.3	7.9	8.7	8.0	8.3	7.8	7.9	7.7	---	---	7.6	7.5
12	8.4	7.9	8.8	7.9	8.1	7.8	7.9	7.8	---	---	7.6	7.5
13	8.8	7.9	8.8	7.9	---	---	---	---	---	---	7.9	7.5
14	8.7	7.9	8.9	7.9	---	---	---	---	---	---	8.0	7.5
15	8.9	7.9	8.8	7.9	---	---	---	---	---	---	7.8	7.6
16	8.8	7.9	8.7	7.9	---	---	---	---	7.7	7.0	7.9	7.5
17	8.8	7.9	8.6	7.9	---	---	---	---	7.9	7.4	7.8	7.5
18	8.8	7.9	8.3	7.8	---	---	---	---	7.8	7.5	7.6	7.3
19	9.0	7.8	8.4	7.7	---	---	---	---	7.9	7.5	7.8	7.4
20	9.3	7.8	8.4	7.8	---	---	7.2	7.1	7.8	7.5	7.8	7.6
21	8.7	7.8	8.5	7.8	---	---	7.3	7.2	7.5	7.3	7.7	7.6
22	8.0	7.7	8.6	7.8	8.6	8.1	7.4	7.2	---	---	7.7	7.6
23	8.1	7.7	8.5	7.8	8.1	7.7	7.4	7.3	---	---	7.7	7.5
24	8.0	7.9	8.4	7.5	7.9	7.6	7.4	7.2	---	---	7.7	7.4
25	8.1	7.9	8.0	7.7	7.8	7.4	7.3	7.0	---	---	7.6	7.4
26	8.2	8.1	8.0	7.6	7.7	7.6	7.3	7.1	---	---	7.8	7.4
27	8.3	8.1	8.1	7.6	7.9	7.6	---	---	---	---	7.7	7.5
28	8.2	8.1	8.2	7.6	8.2	7.6	---	---	---	---	7.6	7.5
29	8.3	8.1	8.3	7.6	8.1	7.6	---	---	7.5	7.5	8.3	7.4
30	8.5	8.1	8.4	7.6	8.1	7.8	---	---	7.6	7.5	7.6	7.4
31	---	---	8.4	7.2	---	---	---	---	7.5	7.4	---	---
MONTH	9.3	7.7	8.9	7.2	8.6	7.3	9.9	7.0	7.9	7.0	8.3	7.3
YEAR	9.9	7.0										

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.0	15.5	10.5	9.0	6.5	5.5	3.0	2.0	5.5	3.0	2.5	1.5
2	19.0	16.0	11.0	9.0	6.5	4.5	3.5	2.0	7.5	4.5	3.0	1.5
3	18.0	16.0	11.5	10.0	5.5	4.0	3.5	2.5	7.5	6.5	4.0	2.5
4	20.5	16.5	11.0	10.0	6.0	5.0	5.0	4.0	8.5	7.0	5.0	4.0
5	21.0	18.0	10.5	9.5	6.5	4.5	6.0	4.0	7.5	4.5	4.5	3.0
6	20.0	19.0	11.0	8.5	6.5	4.5	6.5	4.5	6.0	4.0	4.0	3.0
7	19.5	18.5	8.5	7.5	7.0	5.0	6.0	5.0	7.0	4.5	4.5	3.5
8	18.5	17.0	8.5	7.0	6.0	5.0	6.5	5.0	7.5	3.5	5.5	3.5
9	17.0	15.5	9.5	7.5	6.0	4.5	6.0	5.0	9.5	5.5	7.0	4.5
10	16.0	14.5	10.0	8.5	5.5	5.5	6.0	5.0	11.0	7.5	9.0	5.0
11	17.0	14.5	10.0	8.5	6.5	5.0	5.0	3.5	10.5	7.5	10.0	6.5
12	17.5	14.5	9.5	8.0	6.5	5.0	5.0	4.0	7.5	6.0	10.5	8.5
13	19.0	16.0	9.5	7.5	4.5	3.0	6.0	3.5	6.0	4.5	10.5	8.5
14	17.0	14.5	8.5	6.5	5.5	3.0	8.0	6.0	4.5	3.5	9.0	8.0
15	17.5	15.0	8.5	6.0	6.0	4.5	8.0	6.0	4.5	4.0	9.0	7.5
16	15.5	14.0	9.0	5.5	6.5	4.5	6.0	2.0	5.5	3.5	10.5	9.0
17	14.0	12.5	9.5	7.0	6.0	5.5	2.0	1.0	4.5	2.5	10.0	8.5
18	14.0	12.0	9.5	8.0	7.0	5.5	5.0	2.0	5.5	3.5	9.5	7.5
19	15.0	12.5	10.0	8.0	7.5	5.5	7.0	4.5	5.0	4.0	8.0	6.5
20	15.0	14.0	10.0	7.5	7.0	4.5	7.5	5.0	4.0	3.0	8.0	7.0
21	14.5	13.0	8.5	7.0	4.5	4.0	7.5	6.0	4.5	3.5	7.5	6.0
22	13.5	12.0	7.0	6.0	6.0	4.0	7.5	5.0	6.5	4.0	7.5	6.0
23	15.0	11.5	7.5	6.5	7.0	4.5	6.0	3.5	7.5	5.5	6.5	5.0
24	14.0	13.0	8.0	7.0	5.5	4.0	7.0	5.5	5.5	4.0	6.5	5.0
25	14.0	13.5	9.5	7.0	4.5	3.5	8.0	7.0	4.0	2.5	6.0	5.0
26	13.5	12.5	10.0	8.0	3.5	2.5	8.0	6.0	3.0	2.0	7.0	5.5
27	13.0	11.5	11.0	9.0	4.0	2.5	6.0	4.5	3.0	2.5	7.5	6.5
28	12.0	10.5	9.0	6.0	5.0	4.0	5.5	2.5	2.5	1.5	10.0	7.5
29	12.0	9.5	6.5	5.5	4.5	2.0	4.0	2.5	---	---	12.0	9.5
30	11.0	10.5	6.5	5.0	4.0	2.0	4.5	2.5	---	---	14.5	11.0
31	11.5	9.5	---	---	4.0	2.5	4.0	2.0	---	---	13.0	12.0
MONTH	21.0	9.5	11.5	5.0	7.5	2.0	8.0	1.0	11.0	1.5	14.5	1.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.0	10.5	17.5	14.0	[illegible]	24.0	29.0	24.0	29.0	25.0	30.5	26.0
2	13.0	11.0	18.5	15.5	[illegible]	19.5	30.0	24.0	29.0	23.0	30.5	27.0
3	12.5	11.5	19.0	16.5	[illegible]	18.0	29.0	23.0	29.5	24.0	28.0	25.0
4	12.5	11.5	19.0	17.5	[illegible]	18.0	28.0	21.5	30.0	25.5	28.0	23.0
5	12.5	10.5	21.0	18.0	24.0	21.0	31.0	26.0	29.5	26.0	28.5	24.0
6	10.5	9.5	22.5	20.0	22.0	19.5	33.5	26.5	29.5	24.0	27.0	24.5
7	9.0	8.5	22.0	19.0	21.0	18.5	34.0	27.5	28.5	25.0	28.0	22.0
8	8.5	8.0	20.5	17.0	21.5	17.5	31.5	28.0	29.5	27.0	28.0	23.0
9	9.0	7.5	19.0	16.5	21.5	17.0	31.0	28.0	30.0	28.0	28.0	24.5
10	10.0	8.0	19.5	16.0	24.0	18.0	30.5	26.0	28.0	24.0	26.0	23.5
11	13.0	8.5	22.0	17.0	23.0	18.0	30.5	25.0	28.5	24.5	24.0	21.5
12	16.0	11.5	22.0	18.0	21.5	20.0	30.5	27.5	27.0	24.5	24.0	19.5
13	17.5	13.5	24.0	19.5	25.0	20.0	32.0	27.5	26.0	24.5	24.5	22.5
14	18.5	15.0	25.0	20.0	27.5	22.5	33.0	26.5	26.5	24.5	25.5	21.5
15	19.0	15.0	25.5	18.5	28.0	22.0	33.5	27.0	27.0	23.5	23.0	21.5
16	18.5	15.5	27.0	19.0	28.0	22.5	32.5	26.5	26.5	24.5	23.5	20.5
17	19.0	16.0	28.5	22.0	29.0	23.5	31.5	25.5	25.5	24.0	24.5	22.5
18	19.0	15.5	29.5	24.0	28.5	25.5	34.5	29.5	25.5	23.5	23.0	21.5
19	22.5	17.5	31.0	25.5	28.5	23.5	30.0	28.0	24.5	22.5	23.5	21.5
20	25.0	20.0	32.0	25.0	27.5	23.0	33.5	30.5	25.0	21.5	23.5	22.0
21	25.0	21.0	31.5	25.0	26.0	22.0	32.5	29.5	24.0	21.0	22.0	20.5
22	23.5	22.5	31.0	25.5	27.0	20.5	32.0	28.0	24.0	21.5	22.5	20.5
23	23.0	21.0	30.5	25.0	27.0	21.0	30.5	26.0	25.0	21.5	23.5	21.0
24	21.0	18.5	31.0	26.5	27.0	21.5	29.5	24.5	24.0	22.5	24.0	22.0
25	19.5	17.5	30.5	27.5	31.0	22.0	30.0	25.0	25.0	21.5	23.5	21.5
26	17.5	15.5	29.5	23.5	29.0	24.5	28.5	25.5	26.5	21.0	23.0	21.5
27	17.5	14.5	29.5	21.5	28.5	22.0	28.0	23.5	28.5	24.5	24.0	21.5
28	16.5	14.5	29.5	22.0	31.0	25.0	28.5	22.0	28.5	25.5	22.5	21.5
29	16.0	13.0	28.0	22.0	29.0	24.5	26.5	24.0	27.5	25.5	23.0	20.5
30	16.5	13.5	26.5	21.0	27.0	24.0	29.5	25.0	27.5	25.5	23.5	21.0
31	---	---	27.5	21.0	---	---	30.0	25.0	29.5	25.0	---	---
MONTH	25.0	7.5	32.0	14.0	31.0	17.0	34.5	21.5	30.0	21.0	30.5	19.5
YEAR	34.5	1.0										

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.4	7.1	10.0	8.6	11.3	9.8	12.8	11.7	11.0	9.6	13.8	13.3
2	8.2	7.4	9.8	8.6	11.5	9.6	13.1	11.9	10.8	9.1	13.7	13.1
3	8.6	7.5	9.5	6.5	11.9	10.0	12.9	11.4	10.1	8.6	13.2	12.8
4	8.4	5.8	9.6	7.7	11.1	9.8	12.6	10.7	10.3	8.4	12.8	12.2
5	8.2	5.4	9.6	8.3	11.9	10.1	12.0	10.1	11.1	8.2	13.1	12.3
6	7.3	2.8	9.3	8.5	11.8	9.9	11.8	9.3	11.4	9.7	13.2	12.6
7	7.7	5.5	10.1	6.7	11.0	9.5	12.1	9.1	11.4	9.4	13.0	12.3
8	7.8	5.8	10.4	8.8	11.6	10.5	11.9	9.5	11.2	8.9	12.9	12.3
9	7.6	6.0	10.5	8.9	11.7	10.4	12.0	9.5	10.6	8.2	12.5	11.9
10	8.4	7.4	10.4	9.1	10.5	10.2	11.8	9.2	10.3	8.1	12.1	11.3
11	8.3	6.9	10.5	9.2	11.9	10.3	12.0	9.3	9.9	8.4	11.9	10.7
12	8.2	6.0	10.6	9.4	11.7	10.6	11.8	9.7	10.6	9.7	10.9	9.5
13	7.6	4.3	10.9	9.6	12.5	10.9	11.8	9.2	11.3	10.7	11.1	10.0
14	8.1	5.5	11.6	10.0	12.3	10.8	10.6	8.4	12.0	11.1	11.4	10.8
15	7.5	4.7	11.0	10.3	12.2	10.6	10.8	8.5	12.1	11.5	11.4	10.6
16	8.1	6.6	11.1	9.9	11.7	10.2	12.1	9.2	11.9	11.5	11.8	10.5
17	8.5	6.6	10.8	9.1	11.4	10.2	12.3	10.3	12.3	11.6	10.9	10.5
18	8.8	5.0	10.9	9.1	11.6	10.2	11.4	9.1	11.9	11.3	11.1	10.3
19	8.6	4.7	10.7	9.2	11.7	9.7	10.7	8.5	12.2	11.4	11.7	11.2
20	7.5	3.2	10.5	9.4	10.6	9.7	10.7	8.6	12.2	11.6	11.5	11.1
21	7.8	5.2	10.9	9.6	11.9	10.4	10.8	8.6	12.1	11.3	11.9	11.4
22	8.6	5.7	11.5	9.8	12.2	10.1	10.8	8.5	11.8	10.9	11.8	11.1
23	8.2	6.7	11.5	9.6	11.3	10.2	11.4	9.3	11.5	10.8	12.2	11.7
24	7.6	6.4	11.4	9.7	12.1	10.5	10.5	8.5	12.2	11.2	12.4	11.9
25	7.7	6.8	11.1	9.4	12.4	11.2	10.4	8.3	13.0	12.2	12.3	11.8
26	7.9	6.6	10.0	9.0	12.8	11.6	10.1	8.3	13.4	12.9	12.2	11.6
27	8.8	7.2	10.3	8.9	12.9	11.2	10.7	8.6	13.3	12.9	11.7	11.3
28	9.2	7.5	10.4	9.0	11.9	10.9	11.1	8.9	13.8	13.3	11.2	9.9
29	9.6	8.5	11.6	10.2	12.7	10.7	10.8	9.5	---	---	10.4	9.6
30	9.1	8.1	11.8	10.3	12.6	10.9	11.0	9.6	---	---	11.0	9.4
31	9.3	7.2	---	---	12.5	10.8	11.2	9.9	---	---	11.0	10.1
MONTH	9.6	2.8	11.8	6.5	12.9	9.5	13.1	8.3	13.8	8.1	13.8	9.4

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.5	10.7	10.6	9.2	6.3	3.0	5.7	1.9	1.3	.0	---	---
2	11.1	10.5	9.4	7.8	5.8	3.8	6.0	4.3	0.7	0.1	---	---
3	11.5	10.9	9.8	8.3	7.4	4.9	6.4	4.2	0.9	.0	---	---
4	11.4	10.7	8.6	7.7	7.2	4.4	5.6	0.1	0.5	.0	---	---
5	11.5	10.6	8.7	7.7	5.2	4.0	3.4	1.7	0.5	.0	---	---
6	12.0	11.4	8.4	7.3	6.6	4.6	4.3	1.4	1.1	.0	---	---
7	12.3	11.8	9.0	7.3	7.2	5.7	5.9	0.2	5.6	1.7	---	---
8	12.6	11.9	9.5	7.8	7.5	5.5	4.4	1.0	3.9	1.7	---	---
9	12.7	12.1	9.9	8.1	7.4	5.4	3.2	0.4	3.8	2.0	---	---
10	12.4	11.9	10.2	8.0	7.8	5.4	1.8	0.3	5.5	1.0	---	---
11	12.1	10.8	10.8	7.8	8.2	5.4	3.6	0.1	6.3	4.5	---	---
12	11.7	10.0	11.1	7.0	7.5	5.3	3.5	0.9	6.2	4.8	---	---
13	11.7	9.2	11.3	6.4	6.3	5.4	2.8	0.5	5.5	2.9	---	---
14	11.8	8.9	11.6	6.3	6.8	5.1	2.8	0.5	3.5	2.0	5.5	3.3
15	12.5	8.3	11.4	6.0	7.6	4.8	3.4	0.2	5.4	2.3	4.0	1.8
16	12.3	8.3	10.2	5.2	9.2	4.4	4.1	0.2	5.1	2.7	6.2	0.5
17	12.3	8.3	9.0	4.7	9.4	2.4	4.7	2.6	6.9	0.2	6.3	4.8
18	12.0	7.8	7.9	4.0	6.7	4.6	4.7	0.7	7.1	5.2	5.6	2.7
19	12.9	6.1	7.8	3.4	8.1	4.6	2.6	0.1	6.7	5.0	6.2	3.8
20	10.4	5.9	8.2	3.5	7.0	4.4	2.6	0.1	6.5	4.3	6.1	4.3
21	9.8	5.4	8.7	3.9	8.0	4.2	1.8	0.1	6.2	0.6	5.8	4.2
22	6.8	4.7	8.8	4.0	10.1	3.8	3.5	1.5	7.2	5.5	5.6	3.9
23	6.9	4.4	8.5	3.7	7.7	3.4	4.1	1.1	6.0	4.0	5.4	3.9
24	7.7	6.6	8.4	0.6	4.8	0.2	3.1	.0	5.4	3.7	5.0	2.2
25	8.1	6.9	7.5	3.2	3.9	0.1	7.0	0.1	5.6	3.3	5.1	2.6
26	9.4	8.2	7.8	3.0	2.9	0.1	3.6	0.8	4.9	2.3	6.0	5.1
27	10.1	9.2	8.4	3.5	2.9	0.4	2.3	0.7	3.9	0.9	5.3	3.1
28	9.9	9.2	8.8	3.5	4.4	0.1	1.6	0.1	2.5	0.3	5.1	3.0
29	10.7	9.8	9.5	3.6	5.2	1.9	1.2	.0	---	---	4.7	2.0
30	10.7	9.6	10.5	3.9	4.8	1.8	3.5	0.3	---	---	4.1	1.9
31	---	---	10.4	0.1	---	---	1.6	.0	---	---	---	---
MONTH	12.9	4.4	11.6	0.1	10.1	0.1	7.0	.0	7.2	.0	6.3	0.5
YEAR	13.8	.0										

04206000 CUYAHOGA RIVER AT OLD PORTAGE, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	23	27	9	9.0	5	2.8	7	3.8	6	2.3	50	236
2	22	25	7	6.4	4	2.2	6	3.1	7	2.7	68	261
3	22	24	5	4.3	5	2.4	5	2.5	7	2.7	49	161
4	19	17	5	4.4	3	1.4	8	4.0	7	2.7	13	38
5	16	13	8	6.6	3	1.4	9	4.2	7	2.7	11	30
6	23	17	8	6.3	10	4.6	7	3.0	8	3.0	14	34
7	12	11	6	4.5	40	33	6	2.5	9	3.3	13	31
8	12	9.9	8	6.3	14	8.7	7	2.9	7	2.6	13	31
9	10	10	9	6.8	10	5.5	7	2.9	5	1.9	12	26
10	10	9.6	9	6.1	9	5.1	6	2.5	17	7.8	10	19
11	11	9.4	7	4.9	8	4.9	7	2.7	36	25	12	20
12	12	9.7	6	4.2	8	4.7	5	1.9	33	33	33	61
13	8	4.4	5	3.4	9	5.3	5	1.9	30	36	39	138
14	6	3.5	11	7.7	8	4.3	7	2.7	22	24	39	124
15	6	3.4	9	6.1	6	3.3	7	2.8	13	13	39	117
16	5	3.0	6	3.7	5	2.7	7	2.8	9	8.8	30	96
17	6	3.3	8	4.7	4	2.1	8	2.7	12	12	15	43
18	6	3.2	6	3.3	4	2.0	6	2.1	8	7.8	280	1460
19	5	2.5	4	2.1	5	2.4	6	2.1	6	5.9	58	271
20	5	2.7	5	2.7	31	19	8	2.9	8	7.6	34	140
21	8	4.3	7	4.3	18	12	7	2.6	5	4.3	34	138
22	8	4.6	7	3.9	14	7.8	6	2.3	20	24	27	115
23	12	7.5	5	2.5	8	4.5	5	1.8	103	159	24	100
24	13	12	4	2.0	7	4.6	5	1.9	241	840	21	84
25	14	12	3	1.6	8	5.8	5	1.9	209	1040	18	68
26	12	10	3	1.8	7	5.5	6	2.4	126	595	20	94
27	7	6.1	4	2.5	8	5.9	8	3.3	95	505	33	94
28	8	7.4	5	3.3	8	5.4	9	3.6	98	553	32	92
29	7	6.7	4	2.7	9	5.6	10	3.6	---	---	25	69
30	19	17	7	4.4	10	4.9	8	3.0	---	---	14	34
31	55	72	---	---	8	3.8	8	3.0	---	---	14	34
TOTAL	---	368.2	---	132.5	---	183.6	---	85.4	---	3925.1	---	4259
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14	34	13	20	45	20	76	64	8	3.5	15	6.0
2	154	696	12	18	3	0.95	13	5.6	10	4.4	18	11
3	34	156	16	23	3	0.95	12	3.7	12	5.2	19	11
4	34	135	17	25	13	5.5	144	168	16	6.8	13	6.1
5	48	211	18	27	45	28	12	8.5	28	15	10	4.3
6	34	147	15	21	88	77	8	4.7	50	35	14	6.2
7	26	89	12	16	18	12	66	101	190	325	15	7.0
8	13	41	13	15	25	14	35	27	20	15	15	6.9
9	9	25	17	18	430	540	30	15	15	13	16	7.2
10	7	17	16	15	72	51	18	8.3	200	342	13	6.1
11	8	17	10	8.3	47	32	156	281	70	92	10	4.3
12	8	15	10	7.6	37	28	40	26	140	211	11	4.9
13	10	17	10	6.8	25	20	17	9.5	40	44	35	29
14	11	17	7	4.3	13	9.7	8	4.1	25	25	226	376
15	8	9.8	7	3.7	7	4.4	7	3.1	35	43	55	42
16	8	8.9	7	3.4	8	4.1	130	291	75	104	136	179
17	8	8.7	7	3.3	8	6.8	236	346	238	583	37	51
18	8	7.9	7	3.0	7	5.9	40	34	25	35	17	24
19	9	5.5	4	1.7	4	2.1	109	94	25	31	14	19
20	10	5.4	5	2.1	7	2.9	25	18	40	41	16	20
21	20	11	5	2.0	9	2.4	16	12	229	571	22	26
22	25	15	5	1.9	6	2.1	25	20	50	80	21	23
23	23	20	4	1.6	6	2.4	92	60	20	24	12	13
24	25	21	6	3.4	10	3.3	100	52	23	23	11	11
25	27	33	4	1.8	8	4.7	90	68	17	15	14	15
26	24	42	3	0.88	8	3.4	22	17	13	9.5	17	17
27	25	52	3	0.83	9	3.5	12	7.1	9	5.6	25	22
28	15	33	3	0.83	176	164	11	5.3	18	11	5	4.2
29	13	27	2	0.55	289	423	33	19	38	22	7	5.6
30	14	26	2	0.51	35	21	18	11	19	9.6	5	3.8
31	---	---	52	54	---	---	11	4.7	12	5.3	---	---
TOTAL	---	1943.2	---	310.50	---	1495.10	---	1788.6	---	2749.9	---	961.6

TOTAL LOAD FOR YEAR: 18202.70 TONS.

04206250 CUYAHOGA RIVER AT IRA, OH

LOCATION.--Lat 41°10'53", long 81°35'00", Summit County, Hydrologic Unit 04110002, on left bank at upstream side of highway bridge on Ira Road at Ira, 1.8 mi (2.9 km) downstream from Yellow Creek, and 2.1 mi (3.4 km) upstream from Furnace Run.

DRAINAGE AREA.--478 mi² (1,238 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 712.13 ft (217.057 m) above mean sea level (Summit County Engineers Office benchmark).

REMARKS.--Records good. Natural flow of stream affected by diversions, storage reservoirs and power plants. Some diversion from the Tuscarawas drainage into this basin at Portage Lakes (see REMARKS for station 03116000).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,730 ft³/s (162 m³/s) July 11, 1976, gage height, 13.62 ft (4.157 m) minimum daily, 170 ft³/s (4.81 m³/s) June 15, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,770 ft³/s (107 m³/s) Mar. 18, gage height, 10.61 ft (3.234 m); minimum daily, 173 ft³/s (4.90 m³/s) June 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	499	520	299	295	235	2130	1130	765	380	540	209	194
2	495	439	292	288	238	1700	2250	778	290	268	206	268
3	475	403	270	299	244	1450	2610	805	240	188	200	275
4	419	423	260	296	247	1390	2080	878	191	376	200	203
5	383	403	244	288	247	1280	2340	864	240	332	261	188
6	351	383	257	271	229	1130	2120	774	332	293	348	197
7	407	303	524	264	235	1110	1750	693	251	364	868	203
8	391	391	383	254	226	1110	1450	612	286	396	388	203
9	495	387	341	250	241	1020	1250	553	456	251	400	200
10	467	371	334	264	268	915	1120	508	293	212	756	209
11	403	371	371	244	423	800	1030	468	247	340	598	188
12	391	363	351	238	551	925	918	424	230	332	819	194
13	285	351	344	244	690	2180	878	396	247	275	520	388
14	285	351	323	247	605	1640	805	364	247	240	452	927
15	274	351	330	254	551	1430	670	320	218	218	520	408
16	292	323	323	250	507	1430	612	308	188	258	580	828
17	254	316	316	232	487	1290	594	300	384	634	855	774
18	257	299	302	223	495	2800	567	289	440	456	598	724
19	250	288	292	226	491	2480	440	282	268	384	520	720
20	268	281	391	232	475	2170	400	286	230	336	436	607
21	296	316	395	247	447	2000	396	275	191	356	693	540
22	320	299	334	238	463	2220	420	261	200	368	846	500
23	292	271	341	232	905	2100	765	261	203	296	589	472
24	455	271	363	247	2470	1920	702	328	173	237	480	436
25	443	281	375	247	2680	1730	747	316	289	372	396	468
26	403	330	403	250	2370	1520	909	237	203	372	344	448
27	403	341	391	247	2430	1300	1010	212	200	286	293	400
28	403	341	371	250	2520	1450	1050	200	372	230	279	380
29	431	348	344	226	---	1370	985	188	621	254	275	366
30	407	320	268	223	---	1190	886	188	324	304	244	348
31	650	---	285	232	---	1140	---	258	---	206	224	---
TOTAL	11844	10495	10437	7798	21990	48320	32884	13391	8354	9974	14397	12258
MEAN	382	350	337	252	785	1559	1096	432	278	322	464	409
MAX	650	520	524	299	2680	2800	2610	878	621	634	868	927
MIN	250	271	244	223	226	800	396	188	173	188	200	188

CAL YR 1976 TOTAL 274969 MEAN 751 MAX 5200 MIN 170
WTR YR 1977 TOTAL 202142 MEAN 554 MAX 2800 MIN 173

04206250 CUYAHOGA RIVER AT IRA, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 14...	1730	1510	550	7.6	8.5	10.5	90	5.4	150	75	45	9.6
JUN 29...	1715	500	1000	8.1	25.5	5.8	70	6.4	210	85	62	13

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 14...	42	3.8	94	0	77	3.8	57	72	.1	6.6	283	1.1
JUN 29...	120	4.6	150	0	123	1.9	77	190	.3	7.0	548	1.3

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 14...	.10	.84	.17	5	10	150	120	26	90	.0	100	3.1
JUN 29...	.32	.47	.28	5	20	20	10	5	110	.0	20	11

04207100 TINKERS CREEK AT TWINSBURG, OH

LOCATION.--Lat 41°18'41", long 81°26'13", Summit County, Hydrologic Unit 04110002, at bridge on State Highway 82, 4.3 mi (6.9 km) downstream from Pond Brook, at Twinsburg.

DRAINAGE AREA.--48.4 mi² (125.4 km²).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	TRANSPARENCY (SECCHI DISK) (IN)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	FECAL COLIFORM .7UM-MF (COL./100 ML)
OCT											
05...	1230	16	560	7.9	15.5	25	14	7.9	79	23	700
20...	1030	10	685	8.0	8.0	15	23	9.2	77	16	80
NOV											
02...	1230	20	625	7.5	5.0	20	19	10.2	80	22	1400
18...	0900	37	520	7.7	1.5	25	15	11.4	81	21	120
30...	1330	23	750	7.6	1.0	10	26	12.4	87	15	80
DEC											
21...	0900	--	760	7.4	.5	25	13	11.2	78	17	1200
JAN											
04...	1200	30	750	7.2	1.0	15	--	10.5	74	17	1500
19...	1330	33	780	7.4	.5	15	--	9.0	62	10	380
FEB											
01...	1600	--	740	7.3	1.0	15	--	9.2	65	<10	1200
16...	1630	--	1100	7.3	.5	10	26	8.4	58	20	470
MAR											
01...	1300	159	480	7.0	1.5	20	16	11.6	83	27	1600
15...	1530	195	440	7.5	10.0	30	17	10.0	88	44	190
30...	1000	123	450	7.5	13.0	25	13	8.7	82	20	80
APR											
12...	1100	44	510	7.8	14.0	20	26	9.7	93	23	75
26...	1500	108	430	7.5	11.0	25	15	9.8	88	31	380
MAY											
10...	1200	23	580	7.8	12.0	30	13	8.9	82	25	300
25...	0900	12	780	7.6	22.0	25	15	4.7	53	12	400
JUN											
08...	1100	9.3	820	7.7	14.0	25	14	7.0	67	16	1900
20...	1215	8.4	760	7.6	22.5	20	29	6.8	79	20	2500
JUL											
07...	1400	8.8	740	7.6	27.0	25	10	4.2	52	20	110
20...	0800	86	525	7.3	25.0	250	4.0	5.3	63	40	12000
AUG											
03...	0930	8.6	690	7.8	20.0	35	10	5.3	58	20	420
15...	1300	262	305	7.3	22.0	40	7.0	6.2	70	35	1300
30...	1000	12	600	7.4	21.5	40	10	5.8	65	30	510
SEP											
13...	1545	14	770	7.9	19.0	35	11	6.4	68	25	2500
27...	1200	20	600	7.7	18.0	30	13	6.6	70	30	310

04207100 TINKERS CREEK AT TWINSBURG, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	FECAL STREP-TOCOCCI KF AGAR (COL. PER 100 ML)	TOTAL CAL-CIUM (CA) (MG/L)	TOTAL SODIUM (NA) (MG/L)	TOTAL PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
OCT											
05...	200	--	--	--	--	--	--	--	--	--	358
20...	80	--	--	--	--	--	--	--	--	--	386
NOV											
02...	4900	57	40	4.6	169	0	139	8.6	82	70	381
18...	1800	--	--	--	--	--	--	--	--	--	288
30...	68	--	--	--	--	--	--	--	--	--	448
DEC											
21...	2800	--	--	--	--	--	--	--	--	--	443
JAN											
04...	450	--	--	--	--	--	--	--	--	--	430
19...	280	--	--	--	--	--	--	--	--	--	476
FEB											
01...	840	--	--	--	--	--	--	--	--	--	465
16...	950	60	120	4.4	132	0	108	11	65	230	633
MAR											
01...	1100	--	--	--	--	--	--	--	--	--	275
15...	630	--	--	--	--	--	--	--	--	--	273
30...	310	--	--	--	--	--	--	--	--	--	291
APR											
12...	72	--	--	--	--	--	--	--	--	--	317
26...	1100	--	--	--	--	--	--	--	--	--	270
MAY											
10...	80	50	35	2.4	165	0	135	4.2	53	60	352
24...	200	--	--	--	--	--	--	--	--	--	486
JUN											
08...	420	--	--	--	--	--	--	--	--	--	507
20...	230	--	--	--	--	--	--	--	--	--	481
JUL											
07...	78	--	--	--	--	--	--	--	--	--	437
20...	117000	--	--	--	--	--	--	--	--	--	337
AUG											
03...	790	62	38	4.2	222	0	182	7.6	80	70	408
15...	7700	--	--	--	--	--	--	--	--	--	195
30...	330	--	--	--	--	--	--	--	--	--	358
SEP											
13...	2400	--	--	--	--	--	--	--	--	--	481
27...	420	--	--	--	--	--	--	--	--	--	389

DATE	TOTAL NON-FILT-RABLE RESIDUE (MG/L)	TOTAL RESI-DUE (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (NO3) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL CAD-MIUM (CD) (UG/L)
OCT										
05...	19	377	.60	.08	.64	.70	1.3	5.8	.29	1
20...	45	441	.45	.05	.52	.60	1.1	4.8	.22	0
NOV										
02...	36	415	.84	.23	.62	.85	1.7	7.5	.45	0
18...	40	338	.53	.11	.64	.75	1.3	5.7	.26	1
30...	46	492	.55	.08	.50	.58	1.1	5.0	.20	0
DEC										
21...	51	494	.86	.30	.35	.65	1.5	6.7	.35	0
JAN										
04...	18	437	.90	.42	.88	1.3	2.3	10	.40	1
19...	8	481	1.0	.43	1.9	2.3	3.3	15	.38	1
FEB										
01...	36	501	1.1	.56	.66	1.2	2.3	10	.37	1
16...	57	690	1.2	.27	.93	1.2	2.4	11	.17	0
MAR										
01...	33	308	.91	.19	.63	.82	1.7	7.7	.12	0
15...	40	313	.83	.16	.65	.79	1.6	6.3	.13	0
30...	61	312	.38	.08	.60	.68	1.1	4.7	.15	0
APR										
12...	47	304	.33	.05	.64	.69	1.0	4.5	.15	0
26...	36	306	.40	.11	.78	.89	1.3	5.7	.17	0
MAY										
10...	37	387	.52	.17	.75	.92	1.4	6.4	.26	0
24...	33	529	.88	.13	.81	.94	1.8	8.1	.30	0
JUN										
08...	41	548	1.3	.26	.71	.97	2.3	10	.42	3
20...	44	525	1.2	.34	.96	1.3	2.5	11	.49	0
JUL										
07...	47	504	1.6	.13	.87	1.0	2.6	11	.43	0
20...	402	756	1.0	.62	2.2	2.8	3.8	17	1.1	0
AUG										
03...	84	472	1.5	.11	.99	1.1	2.6	12	.98	0
15...	70	285	.32	.09	1.2	1.3	1.6	7.2	.25	0
30...	72	420	2.2	.76	.84	1.6	3.8	17	1.3	0
SEP										
13...	79	540	1.8	.17	.55	.72	2.5	11	.57	0
27...	50	427	.84	.05	.86	.91	1.9	7.1	.21	0

04207130 TINKERS CREEK AT TWINSBURG, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	OIL AND GREASE (MG/L)
OCT										
05...	<10	8	1300	0	170	4	20	8.4	3	1
20...	<10	0	770	0	100	2	20	8.0	0	0
NOV										
02...	<10	10	880	3	100	3	40	11	0	1
18...	<10	10	1200	4	80	3	50	10	1	1
30...	<10	0	680	1	130	5	70	9.8	4	0
DEC										
21...	10	10	1100	2	210	14	40	8.5	0	0
JAN										
04...	<10	0	800	2	200	3	30	7.0	1	0
19...	<10	0	770	1	300	0	10	8.2	0	0
FEB										
01...	<10	2	710	2	200	5	10	8.2	4	0
16...	<10	10	730	0	290	42	20	6.5	0	0
MAR										
01...	40	3	1300	4	120	0	10	8.8	1	0
15...	10	8	1400	5	90	9	10	4.2	7	1
30...	20	4	1500	0	80	2	0	--	0	1
APR										
12...	10	3	1100	8	140	5	0	5.2	2	0
26...	10	3	1800	3	110	6	10	6.5	4	0
MAY										
10...	<10	2	1800	3	230	0	10	7.8	2	1
26...	<10	2	1400	4	170	2	20	7.2	0	3
JUN										
08...	20	3	1800	1	260	410	30	7.8	0	0
28...	<10	6	610	4	90	15	40	7.2	0	0
JUL										
07...	10	4	1400	26	350	12	20	6.3	2	--
20...	20	22	23000	17	450	28	60	11	0	4
AUG										
03...	<10	140	2600	2	270	11	30	6.2	0	0
15...	<10	9	2800	5	80	4	80	7.3	0	1
30...	90	12	990	33	90	18	70	6.8	0	--
SEP										
13...	<10	7	2300	11	300	9	80	6.2	0	2
27...	10	6	2200	3	280	6	20	13	0	--

04207200 TINKERS CREEK AT BEDFORD, OH

LOCATION.--Lat 41°23'04", long 81°31'39", in T.6 N., R.11 W., Cuyahoga County, Hydrologic Unit 04110002, on left bank at downstream side of bridge on State Highway 14 in Bedford, 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--83.9 mi² (217 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1962 to current year.

REVISED RECORDS.--WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 876.18 ft (267.060 m) above mean sea level.

REMARKS.--Records good.

AVERAGE DISCHARGE.--14 years (1963-77), 123 ft³/s (3.483 m³/s), 19.91 in/yr (506 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,220 ft³/s (204 m³/s) July 20, 1969, gage height, 10.10 ft (3.078 m), from rating curve extended above 3,400 ft³/s (96.3 m³/s) on the basis of contracted-opening measurement of peak flow; minimum, 5.2 ft³/s (0.15 m³/s) Aug. 19, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 24	1230	*2020	57.2	*6.52	1.987	Mar. 18	1200	1860	52.7	6.37	1.942
Mar. 13	0130	1590	45.0	6.18	1.884	Aug. 14	0330	1660	47.0	6.18	1.884

Minimum discharge, 14 ft³/s (0.40 m³/s) May 30, 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	95	36	42	30	210	96	54	29	245	57	27
2	28	59	33	40	30	136	692	116	18	54	29	26
3	26	46	30	40	30	116	813	106	19	25	26	23
4	26	40	29	38	30	238	670	151	17	25	25	21
5	28	35	28	38	30	224	505	177	20	25	69	20
6	31	32	28	36	30	151	387	121	52	23	162	20
7	38	30	118	36	30	118	237	79	28	75	256	20
8	30	32	96	36	30	98	154	58	21	114	148	19
9	106	37	68	34	30	89	109	46	163	54	71	18
10	72	49	62	34	40	82	92	41	43	26	173	25
11	45	65	120	34	80	72	81	37	25	29	96	18
12	34	57	79	32	159	256	70	34	20	58	252	18
13	29	47	63	32	291	746	61	32	20	128	245	52
14	26	41	53	32	191	614	54	30	20	30	851	182
15	25	38	46	32	148	320	47	27	19	23	345	114
16	22	37	45	32	120	165	42	27	19	22	203	305
17	23	53	46	32	100	112	39	31	33	111	134	294
18	25	54	42	32	90	1160	50	30	162	36	71	217
19	25	51	41	32	80	844	46	39	35	298	52	131
20	40	46	156	32	76	851	43	25	26	108	40	116
21	51	42	95	30	68	450	43	22	22	52	170	122
22	33	42	85	30	100	602	75	21	19	37	245	71
23	28	41	75	30	760	490	472	25	18	32	277	53
24	108	37	65	30	1530	350	454	85	18	21	118	41
25	93	37	61	30	1320	207	400	27	22	119	66	35
26	61	61	56	30	1010	141	242	22	20	110	45	72
27	44	68	54	30	590	112	134	20	19	47	35	35
28	35	58	50	30	345	412	99	18	36	28	30	31
29	31	52	46	30	---	350	77	16	107	65	49	28
30	30	39	44	30	---	217	63	15	256	79	38	27
31	141	---	44	30	---	129	---	18	---	31	28	---
TOTAL	1366	1421	1894	1026	7368	10062	6347	1550	1326	2130	4406	2181
MEAN	44.1	47.4	61.1	33.1	263	325	212	50.0	44.2	68.7	142	72.7
MAX	141	95	156	42	1530	1160	813	177	256	298	851	305
MIN	22	30	28	30	30	72	39	15	17	21	25	18
CFSM	.53	.57	.73	.40	3.14	3.87	2.53	.60	.53	.82	1.69	.87
IN.	.61	.63	.84	.45	3.27	4.46	2.81	.69	.59	.94	1.95	.97

CAL YR 1976 TOTAL 50001 MEAN 137 MAX 2180 MIN 17 CFSM 1.63 IN 22.17
WTR YR 1977 TOTAL 41077 MEAN 113 MAX 1530 MIN 15 CFSM 1.35 IN 18.21

04207200 TINKERS CREEK AT BEDFORD, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: March to June 1972, January 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,300 mg/L Feb. 16, 1976; minimum daily mean, 1 mg/L on many days during July, August, 1975.
SEDIMENT LOADS: Maximum daily, 9,800 tons (8,890 tonnes) Feb. 16, 1976; minimum daily, 0.05 ton (0.05 tonne) Aug. 1-3, 1976.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,100 mg/L June 30; minimum daily mean, 4 mg/L Nov. 5, July 6.
SEDIMENT LOADS: Maximum daily, 3,650 tons (3,310 tonnes) Feb. 24; minimum daily, 0.25 ton (0.23 tonne) July 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 15...	1345	285	540	7.8	11.0	10.4	94	3.0	150	78	44	9.4
JUL 28...	1115	28	740	7.7	21.0	8.5	94	4.9	220	85	65	13

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 15...	40	3.7	88	0	71	2.2	54	84	.1	6.9	293	.79
JUL 28...	60	6.0	160	0	131	5.1	73	98	.5	11	406	1.2

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 15...	.02	.21	.26	3	20	11	670	7	90	.0	30	5.3
JUL 28...	.36	1.3	1.4	3	20	15	50	140	90	.0	60	6.2

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM
FEB 24...	1250	1980	1890	10100	30	38	47
MAR 18...	1010	1730	1210	5650	24	33	44
APR 02...	0915	1040	2070	5810	30	37	50

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
FEB 24...	60	80	85	91	96	99	100
MAR 18...	57	62	83	90	97	99	100
APR 02...	70	79	95	99	100	--	--

04207200 TINKERS CREEK AT BEDFORD, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11	0.95	14	3.6	19	1.8	14	1.6	12	0.97	46	26
2	8	0.60	9	1.4	15	1.3	14	1.5	10	0.81	35	13
3	9	0.63	10	1.2	13	1.1	14	1.5	10	0.81	30	9.4
4	15	1.1	7	0.76	10	0.78	15	1.5	11	0.89	118	98
5	15	1.1	4	0.38	12	0.91	15	1.5	12	0.97	52	31
6	12	1.0	5	0.43	14	1.1	14	1.4	42	3.4	27	11
7	10	1.0	6	0.49	89	37	16	1.6	26	2.1	23	7.3
8	12	0.97	8	0.69	28	7.3	12	1.2	22	1.8	64	17
9	80	23	8	0.80	21	3.9	11	1.0	14	1.1	55	13
10	39	7.6	8	1.1	27	4.5	11	1.0	22	2.4	20	4.4
11	17	2.1	9	1.6	43	14	11	1.0	93	34	12	2.3
12	12	1.1	12	1.8	18	3.8	11	0.95	55	24	290	200
13	14	1.1	9	1.1	18	3.1	10	0.86	82	64	640	1290
14	10	0.70	8	0.89	20	2.9	11	0.95	57	29	195	323
15	8	0.54	7	0.72	15	1.9	10	0.86	90	36	80	69
16	10	0.59	14	1.4	9	1.1	25	2.2	63	20	52	23
17	10	0.62	13	1.9	10	1.2	32	2.8	35	9.5	33	10
18	10	0.68	16	2.3	9	1.0	11	0.95	22	5.3	648	2450
19	9	0.61	18	2.5	8	0.89	10	0.86	19	4.1	204	465
20	28	3.0	15	1.9	229	153	9	0.78	10	2.1	85	195
21	36	5.0	13	1.5	65	17	9	0.73	14	2.6	53	64
22	12	1.1	12	1.4	28	6.4	8	0.65	34	9.2	223	419
23	10	0.76	10	1.1	25	5.1	8	0.65	768	2510	82	108
24	46	13	9	0.90	22	3.9	9	0.73	835	3650	64	60
25	15	3.8	9	0.90	19	3.1	9	0.73	275	980	29	16
26	8	1.3	20	3.3	18	2.7	7	0.57	143	390	28	11
27	7	0.83	18	3.3	17	2.5	10	0.81	90	143	28	8.5
28	7	0.66	12	1.9	14	1.9	28	2.3	63	59	143	159
29	33	2.8	16	2.2	12	1.5	17	1.4	---	---	72	68
30	23	1.9	17	1.8	13	1.5	15	1.2	---	---	35	21
31	68	26	---	---	14	1.7	13	1.1	---	---	19	6.6
TOTAL	---	106.14	---	45.26	---	289.88	---	36.88	---	7987.05	---	6198.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13	3.4	10	1.5	20	1.6	617	867	46	7.1	19	1.4
2	714	1820	132	48	10	0.49	40	5.8	26	2.0	20	1.4
3	260	571	17	4.9	7	0.36	16	1.1	13	0.91	15	0.93
4	91	165	86	50	7	0.32	12	0.81	12	0.81	15	0.85
5	76	104	56	27	8	0.43	6	0.54	250	47	17	0.92
6	42	44	19	6.2	126	26	4	0.25	40	17	18	0.97
7	33	21	18	3.8	19	1.4	380	77	150	104	16	0.86
8	24	10	15	2.3	7	0.40	280	86	41	16	14	0.72
9	18	5.3	14	1.7	290	201	112	16	18	3.5	16	0.78
10	18	4.5	13	1.4	19	2.2	54	3.8	55	26	28	1.9
11	18	3.9	30	3.0	6	0.41	15	1.2	23	6.0	10	0.49
12	14	2.6	20	1.8	5	0.27	184	29	133	90	17	0.83
13	12	2.0	9	0.76	5	0.27	675	233	123	81	41	5.8
14	11	1.6	7	0.57	8	0.43	50	4.1	462	1060	228	134
15	11	1.4	7	0.51	9	0.46	20	1.2	242	225	127	39
16	11	1.2	5	0.36	6	0.31	50	3.0	72	39	312	284
17	11	1.2	9	0.75	30	2.7	550	165	34	12	186	148
18	26	3.5	7	0.57	494	378	30	2.9	19	3.6	79	46
19	19	2.4	8	0.84	71	6.7	541	974	18	2.5	57	20
20	7	0.81	8	0.54	32	2.2	110	32	17	1.8	63	20
21	7	0.81	8	0.48	11	0.65	52	7.3	48	22	65	21
22	30	6.1	8	0.45	8	0.41	27	2.7	200	132	48	9.2
23	288	494	17	1.1	7	0.34	16	1.4	115	86	33	4.7
24	153	188	152	35	10	0.49	15	0.85	68	22	23	2.5
25	63	68	16	1.2	9	0.53	631	274	30	5.3	20	1.9
26	38	25	8	0.48	9	0.49	150	45	29	3.5	101	20
27	15	5.4	7	0.38	9	0.46	50	6.3	28	2.6	28	2.6
28	8	2.1	7	0.34	57	5.5	22	1.7	21	1.7	23	1.9
29	9	1.9	8	0.35	530	262	270	47	71	9.4	18	1.4
30	10	1.7	11	0.45	1100	1940	210	45	24	2.5	33	2.4
31	---	---	14	0.68	---	---	46	3.9	20	1.5	---	---
TOTAL	---	3561.82	---	197.43	---	2836.82	---	2938.85	---	2033.72	---	776.45

TOTAL LOAD FOR YEAR: 27008.80 TONS.

04207300 TINKERS CREEK NEAR INDEPENDENCE, OH

LOCATION.--Lat 41°21'54", long 81°36'32", Cuyahoga County, Hydrologic Unit 04110002, at bridge on Canal Road, 300 ft (90 m) upstream from confluence with Cuyahoga River, and 2.7 mi (4.3 km) southeast of Independence.

DRAINAGE AREA.--96.0 mi² (248.6 km²).

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	TRANSPARENCY (SECCHI DISK) (IN)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	FECAL COLIFORM .7UM-MF (COL./100 ML)
OCT											
05...	1500	35	810	8.3	18.0	5	42	12.2	130	22	1100
20...	1500	40	915	8.1	9.5	10	4.0	10.8	94	20	2000
NOV											
02...	1530	74	770	8.2	6.5	10	46	11.4	93	22	4300
18...	1300	65	820	8.2	3.5	15	27	13.2	99	26	4000
30...	1700	50	1200	7.9	.5	15	19	12.0	83	38	2100
DEC											
21...	1200	--	1350	7.7	.0	40	16	11.8	81	33	5200
JAN											
04...	1530	49	1850	7.8	.0	10	36	12.0	82	33	270
19...	1600	--	1540	7.8	.5	10	--	11.0	76	33	600
FEB											
01...	1430	--	1170	7.7	1.0	15	--	11.8	83	32	150
16...	1430	118	1900	8.0	.5	7	14	12.4	86	40	4500
MAR											
02...	1230	198	670	7.9	3.0	30	10	13.0	96	35	10000
15...	1200	359	600	7.9	9.0	45	14	10.8	93	19	1600
30...	1300	238	630	8.0	15.0	25	16	9.8	96	22	1400
APR											
12...	1430	97	740	8.3	17.5	10	40	10.8	110	26	200
26...	1630	252	630	8.2	13.0	20	14	10.2	96	28	2800
MAY											
10...	1500	55	770	9.1	15.0	10	42	14.6	140	25	420
25...	1200	47	775	7.8	22.5	20	26	7.7	88	30	3100
JUN											
08...	1330	34	890	8.1	14.0	10	40	9.4	90	25	1200
20...	1330	38	880	7.8	22.0	10	38	9.4	110	25	280
JUL											
07...	1000	31	840	7.7	26.0	10	34	7.5	91	25	870
20...	1100	128	650	7.3	25.5	100	6.0	8.0	96	35	E10000
AUG											
03...	1330	29	855	8.0	24.0	10	32	7.6	89	30	950
15...	1530	302	395	8.0	23.5	65	7.0	7.8	91	35	4200
30...	1500	42	850	8.2	24.0	15	32	7.2	85	35	5000
SEP											
13...	1300	65	790	7.9	19.0	25	12	6.8	72	45	B32000
27...	1500	42	710	8.1	19.5	4	37	8.6	92	30	2400

04207300 TINKERS CREEK NEAR INDEPENDENCE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	FECAL STREP-TOCOCCI KF AGAR (COL. PER 100 ML)	TOTAL CAL-CIUM (CA) (MG/L)	TOTAL SODIUM (NA) (MG/L)	TOTAL PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
OCT											
05...	57	--	--	--	--	--	--	--	--	--	508
20...	5200	--	--	--	--	--	--	--	--	--	539
NOV											
02...	1100	76	46	5.1	190	0	156	1.9	90	94	475
18...	3400	--	--	--	--	--	--	--	--	--	465
30...	1500	--	--	--	--	--	--	--	--	--	708
DEC											
21...	8800	--	--	--	--	--	--	--	--	--	769
JAN											
04...	240	--	--	--	--	--	--	--	--	--	1010
19...	1200	--	--	--	--	--	--	--	--	--	823
FEB											
01...	650	--	--	--	--	--	--	--	--	--	689
16...	2600	78	250	6.2	150	0	123	2.4	86	460	1080
MAR											
02...	4000	--	--	--	--	--	--	--	--	--	288
15...	1000	--	--	--	--	--	--	--	--	--	364
30...	190	--	--	--	--	--	--	--	--	--	361
APR											
12...	62	--	--	--	--	--	--	--	--	--	420
26...	1000	--	--	--	--	--	--	--	--	--	372
MAY											
10...	60	59	65	4.8	122	19	132	.2	81	110	466
25...	220	--	--	--	--	--	--	--	--	--	485
JUN											
08...	1900	--	--	--	--	--	--	--	--	--	553
20...	4100	--	--	--	--	--	--	--	--	--	566
JUL											
07...	160	--	--	--	--	--	--	--	--	--	523
20...	E10000	--	--	--	--	--	--	--	--	--	419
AUG											
03...	560	26	66	6.0	222	0	182	3.6	79	125	501
15...	6500	--	--	--	--	--	--	--	--	--	256
30...	730	--	--	--	--	--	--	--	--	--	506
SEP											
13...	1200	--	--	--	--	--	--	--	--	--	540
27...	250	--	--	--	--	--	--	--	--	--	432

DATE	TOTAL NON-FILT-RABLE RESIDUE (MG/L)	TOTAL RESI-DUE (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL ORGANIC NITRO-GEN (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (NO3) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL CAD-MIUM (CD) (UG/L)
OCT										
05...	24	532	3.5	.42	1.1	1.5	5.0	22	1.0	1
20...	40	579	3.7	.43	1.2	1.6	5.3	23	.63	1
NOV										
02...	44	519	1.7	.54	.76	1.3	3.0	13	.88	0
18...	44	509	1.4	1.3	.90	2.2	3.6	16	.90	1
30...	53	761	2.5	1.9	1.5	3.4	5.9	26	1.1	1
DEC										
21...	72	841	1.6	1.1	1.1	2.2	3.8	17	.62	1
JAN										
04...	20	1030	1.9	2.6	.80	3.4	5.3	23	.79	1
19...	9	832	1.8	3.5	5.1	8.6	10	46	1.4	2
FEB										
01...	27	716	1.8	3.5	4.4	7.9	9.7	43	1.7	1
16...	80	1160	1.7	1.6	1.5	3.1	4.8	21	.75	0
MAR										
02...	215	503	1.3	1.0	1.6	2.6	3.9	17	.37	1
15...	84	448	.91	.33	.87	1.2	2.1	9.3	.25	0
30...	59	420	.70	.38	.72	1.1	1.8	8.0	.38	0
APR										
12...	60	480	1.2	.71	.89	1.6	2.8	12	.42	0
26...	62	434	.96	.31	.99	1.3	2.3	10	.29	0
MAY										
10...	37	503	2.4	.34	1.1	1.4	3.8	17	.77	0
25...	47	532	2.9	.48	1.2	1.7	4.6	20	.91	0
JUN										
08...	30	583	3.7	.44	1.1	1.5	5.2	23	1.2	0
20...	35	601	2.7	.35	.95	1.3	4.0	18	.63	0
JUL										
07...	34	557	3.1	.21	.99	1.2	4.3	19	1.4	0
20...	135	554	1.6	.26	1.2	1.5	3.1	14	.47	0
AUG										
03...	44	545	3.5	1.3	1.9	3.2	6.7	30	1.5	0
15...	140	396	1.0	.23	2.9	3.1	4.1	18	.36	0
30...	41	547	1.4	.15	.95	1.1	2.5	11	.40	0
SEP										
13...	61	601	3.8	.64	1.4	2.0	5.8	26	.87	0
27...	43	475	3.0	.32	1.2	1.5	4.5	20	.60	0

04207300 TINKERS CREEK NEAR INDEPENDENCE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)	TOTAL NICKEL (NI) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	PHENOLS (UG/L)	OIL AND GREASE (MG/L)
OCT										
05...	10	10	350	0	40	17	30	8.8	3	2
20...	30	10	840	1	60	24	120	9.6	13	0
NOV										
02...	<10	10	600	4	90	13	70	9.7	0	0
18...	10	20	1000	4	120	21	80	17	3	0
30...	20	10	1400	6	170	26	120	12	10	1
DEC										
21...	10	20	2400	16	250	16	60	12	9	0
JAN										
04...	<10	20	960	7	220	20	50	11	31	1
19...	10	20	850	4	250	22	60	12	0	0
FEB										
01...	10	20	820	5	230	41	60	13	17	4
16...	50	40	1600	12	280	17	80	11	110	1
MAR										
02...	70	19	8800	19	260	20	50	6.9	11	1
15...	10	12	3000	9	110	13	20	5.1	7	1
30...	<10	7	2000	4	100	7	10	--	0	1
APR										
12...	10	8	600	6	10	7	30	4.6	1	1
26...	10	10	2300	8	110	13	40	7.2	3	0
MAY										
10...	80	14	550	0	100	15	20	7.2	1	1
25...	20	11	1200	7	180	13	40	6.5	0	3
JUN										
08...	10	13	1	3	110	18	40	9.8	0	4
20...	<10	3	1400	6	330	4	20	8.1	0	0
JUL										
07...	50	16	400	12	80	35	30	6.7	0	0
20...	10	16	6000	15	160	16	50	8.3	0	1
AUG										
03...	<10	27	600	0	70	14	60	7.1	1	0
15...	<10	15	5800	18	140	13	100	5.3	0	0
30...	<10	4	2500	20	320	11	60	7.0	0	--
SEP										
13...	330	24	1300	65	120	15	120	20	0	0
27...	10	11	640	9	70	16	40	12	1	0

04207500 OHIO CANAL AT INDEPENDENCE, OH

LOCATION.--Lat 41°23'25", long 81°37'30", in T.6 N., R.12 W., Cuyahoga County, Hydrologic Unit 04110002, on right bank at upstream side of dam, 0.3 mi (0.5 km) upstream from Rockside Road and 0.8 mi (1.3 km) northeast of Independence.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to May 1923, August 1927 to December 1935, October 1940 to current year.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 605.31 ft (184.498 m) above mean sea level. Prior to Dec. 9, 1946, nonrecording gage, or water-stage recorder at site 0.4 mi (0.6 km) downstream at various datums. Dec. 10, 1946, to Nov. 3, 1950, nonrecording gage at present site and datum.

REMARKS.--Records good. Water is diverted from Cuyahoga River into canal at headgates at Brecksville, 6 mi (10 km) upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 277 ft³/s (7.84 m³/s) Jan. 22, 1959; no flow June 4, 1947, July 2-7, 1950, July 16 to Aug. 19, 1959, Oct. 27 to Nov. 6, 1975.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	60	53	54	53	65	62	73	61	65	4.3	46
2	53	58	54	54	53	60	77	73	60	58	4.3	49
3	53	58	55	54	53	59	69	73	60	56	4.3	50
4	53	56	54	54	53	63	82	76	60	58	4.0	50
5	53	54	54	54	53	62	86	77	60	59	4.0	47
6	53	53	54	54	53	58	80	75	61	57	78	48
7	54	53	60	54	53	57	78	72	61	58	69	48
8	54	53	58	54	53	57	77	70	60	62	62	48
9	56	53	57	55	53	57	76	70	64	57	61	49
10	58	55	56	55	54	55	76	69	63	53	62	49
11	54	54	58	54	57	55	75	68	61	53	57	49
12	53	53	57	53	60	62	73	68	61	54	64	48
13	52	53	56	51	67	88	75	68	61	54	62	51
14	53	53	56	53	63	69	75	67	61	52	71	57
15	53	53	50	53	60	63	73	67	61	52	45	51
16	53	53	53	53	58	61	73	66	60	50	47	58
17	53	53	54	49	56	60	72	66	60	52	47	60
18	54	52	55	53	56	87	72	66	67	51	45	53
19	54	52	54	53	56	75	71	64	59	51	48	50
20	55	52	58	53	57	72	70	64	57	48	51	49
21	57	52	58	53	56	66	69	62	57	45	52	48
22	55	53	56	53	57	79	71	62	57	45	58	48
23	55	52	56	53	79	72	80	63	57	44	53	47
24	58	52	56	53	82	67	79	64	57	43	50	47
25	59	52	56	54	71	63	76	64	57	47	49	47
26	58	54	56	54	68	60	81	61	59	45	48	47
27	57	55	57	53	67	54	76	60	58	43	48	47
28	57	54	56	53	65	63	75	60	59	43	47	48
29	57	54	56	52	---	62	75	60	64	42	48	47
30	57	53	55	53	---	56	73	60	62	10	49	47
31	61	---	54	51	---	55	---	59	---	4.6	47	---
TOTAL	1705	1612	1722	1649	1666	1984	2247	2067	1805	1511.6	1438.9	1483
MEAN	55.0	53.7	55.5	53.2	59.5	64.0	74.9	66.7	60.2	48.8	46.4	49.4
MAX	61	60	60	55	82	88	86	77	67	65	78	60
MIN	52	52	50	49	53	54	62	59	57	4.6	4.0	46

CAL YR 1976 TOTAL 22663.0 MEAN 61.9 MAX 182 MIN 34
WTR YR 1977 TOTAL 20890.5 MEAN 57.2 MAX 88 MIN 4.0

04207500 OHIO CANAL AT INDEPENDENCE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
15...	1545	61	540	7.9	13.5	11.2	110	4.3	160	81	47	10
JUL												
28...	0845	43	490	7.3	21.0	7.0	78	1.7	230	92	68	15

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
15...	42	3.7	95	0	78	1.9	65	73	.2	6.8	295	1.1
JUL												
28...	100	5.1	168	0	138	13	97	150	.3	9.4	528	2.4

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
15...	.05	.57	.15	4	10	14	90	12	80	.0	50	5.0
JUL												
28...	.16	.09	.37	3	<10	5	20	4	50	.0	40	5.8

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH
(National stream-quality accounting network station)

LOCATION.--Lat 41°23'43", long 81°37'48, in T.6 N., R.12 W., Cuyahoga County, Hydrologic Unit 04110002, on left bank 240 ft (73 m) downstream from bridge on Old Rockside Road, 0.8 mi (1.3 km) northeast of Independence, and 3.0 mi (4.8 km) downstream from Tinkers Creek.

DRAINAGE AREA.--707 mi² (1,831 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1903 to December 1905 (fragmentary), January to July 1906 (gage heights and discharge measurements only), September 1921 to May 1923, September 1927 to December 1935, March 1940 to current year.

REVISED RECORDS.--WSP 1307: 1922-23(M), 1928-30(M), 1933(M), 1940(M), 1947(M), 1950(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 583.57 ft (177.872 m) above mean sea level. Sept. 21, 1903, to July 21, 1906, nonrecording gage at bridge 240 ft (73 m) upstream at present datum. Sept. 28, 1921, to May 30, 1923, nonrecording gage at bridge 240 ft (73 m) upstream at datum 2.42 ft (0.738 m) higher. Sept. 5, to Oct. 8, 1927, nonrecording gage, and Oct. 9, 1927, to Dec. 31, 1935, Mar. 5, 1940, to June 19, 1969, water-stage recorder, at site 100 ft (30 m) upstream at present datum.

REMARKS.--Records good. Natural flow of stream affected by diversion, storage reservoirs and power plants. Some diversion from the Tuscarawas drainage into this basin at Portage Lakes (see REMARKS for station 03116000). Water diverted into Ohio Canal at Brecksville, 6 mi (10 km) upstream from station, bypasses station. These records do not include flow in canal except above about 15,000 ft³/s (425 m³/s), when channels merge; record of diversion published as Ohio Canal at Independence (see station 04207500).

AVERAGE DISCHARGE.--46 years (1921-22, 1927-35, 1940-77), 789 ft³/s (22.34 m³/s), not including flow in Ohio Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s (702 m³/s) Jan. 22, 1959, gage height, 22.41 ft (6.381 m), from rating curve extended above 17,000 ft³/s (481 m³/s) on basis of contracted-opening measurement of peak flow; minimum daily, 21 ft³/s (0.59 m³/s) Aug. 28, 1933; minimum combined daily discharge of river and canal, 55 ft³/s (1.56 m³/s) Aug. 28, 1933.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,970 ft³/s (226 m³/s) Feb. 24, gage height, 14.71 ft (4.484 m); minimum daily, 156 ft³/s (4.42 m³/s) May 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	574	754	325	360	260	2570	1330	871	318	1330	356	248
2	520	583	328	350	260	2020	3500	940	208	468	297	276
3	502	489	286	340	260	1720	5440	1050	211	276	283	339
4	452	484	279	328	260	1930	3220	1190	191	368	276	269
5	412	460	269	318	260	1890	3610	1320	188	440	335	228
6	368	424	262	300	258	1460	2810	1010	380	353	750	221
7	428	408	754	290	250	1330	2260	840	307	380	1420	235
8	420	416	579	279	250	1300	1840	718	224	831	723	231
9	601	436	464	279	270	1210	1520	624	709	396	525	228
10	835	452	404	283	290	1100	1330	552	412	269	790	248
11	511	452	597	270	456	970	1190	493	279	248	945	228
12	448	448	489	250	822	1220	1050	448	241	484	1470	204
13	364	408	428	250	1350	4870	985	412	231	529	1080	335
14	300	392	384	260	1090	2760	898	372	248	304	3130	1360
15	286	388	384	283	880	2020	772	325	228	269	1000	678
16	307	360	364	248	754	1820	655	290	191	231	858	1490
17	265	350	364	218	691	1620	619	286	214	786	1040	1670
18	279	340	339	230	682	5350	615	276	1100	673	768	1060
19	269	335	325	240	664	5280	525	279	396	1020	646	975
20	293	314	593	240	637	3840	432	269	269	678	529	898
21	424	339	500	240	583	2940	404	255	241	456	728	763
22	311	343	450	250	588	3640	460	235	188	498	1680	642
23	311	321	430	250	2360	3250	1510	228	211	388	1000	574
24	624	297	410	250	6570	2700	1840	376	191	311	709	520
25	687	290	428	265	6200	2160	1300	364	262	808	534	538
26	513	396	448	272	3960	1880	1480	235	258	646	440	574
27	484	472	456	279	3320	1610	1260	204	201	424	364	480
28	460	412	436	270	3110	2410	1220	188	304	304	328	432
29	468	412	408	240	---	2430	1160	175	1000	286	353	412
30	444	308	350	250	---	1680	1000	156	844	574	336	392
31	889	---	340	250	---	1410	---	162	---	335	286	---
TOTAL	14056	12343	12873	8432	37335	72390	46235	15143	10245	15363	23979	16748
MEAN	453	411	415	272	1333	2335	1541	488	342	496	774	558
MAX	889	754	754	360	6570	5350	5440	1320	1100	1330	3130	1670
MIN	265	290	262	218	250	970	404	156	188	231	276	204

CAL YR 1976 TOTAL 363713 MEAN 994 MAX 11700 MIN 177
WTR YR 1977 TOTAL 285142 MEAN 781 MAX 6570 MIN 156

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1953 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1965 to current year.
pH: February 1973 to current year.
WATER TEMPERATURES: October 1948 to September 1949, October 1952 to current year.
DISSOLVED OXYGEN: July 1965 to current year.
SUSPENDED SEDIMENT DISCHARGE: Water years 1950-74, December 1976 to September 1977.

INSTRUMENTATION.--Alcohol-actuated thermograph October 1956 to June 1965, water-quality monitor since July 1965.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Feb. 12, 1977; minimum, 149 micromhos Nov. 23, 1974.
pH: Maximum, 8.9 units Aug. 27, 28, 1976; minimum, 5.9 units Jan. 26, 1976.
WATER TEMPERATURES: Maximum, 31.0°C Aug. 18, 1949; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 14.5 mg/L Feb. 16, 1973; minimum, 0.0 mg/L Oct. 23, 1965, Feb. 10-12, June 23, July 26, 1966.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,800 mg/L Aug. 21, 1960; minimum daily mean, 1 mg/L Sept. 4, 10, 1955.
SEDIMENT LOADS: Maximum daily, 51,400 tons (46,600 tonnes) Mar. 5, 1964; minimum daily, 0.25 ton (0.23 tonnes) Sept. 4, 1955.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Feb. 12; minimum, 324 micromhos Aug. 14.
pH: Maximum, 8.5 units Sept. 6; minimum, 7.2 units Dec. 3, July 1, 5, 20.
WATER TEMPERATURES: Maximum, 30.0°C July 7; minimum, 0.0°C Dec. 29-31, Jan. 1-3, 11-23, 28-31, Feb. 1, 2, 6-9.
DISSOLVED OXYGEN: Maximum, 13.5 mg/L Mar. 24, 26; minimum, 2.6 mg/L July 17.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,270 mg/L Feb. 24; minimum daily mean, 3.0 mg/L June 27.
SEDIMENT LOADS: Maximum daily, 22,500 tons (20,400 tonnes) Feb. 24; minimum daily, 1.6 tons (1.5 tonnes) June 27.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	FECAL COLIFORM .7UM-MF (COL./100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA,MG) (MG/L)
OCT											
06...	0930	380	805	7.8	17.5	2	7.3	76	320	130	210
NOV											
03...	1300	480	900	7.8	9.5	--	10.0	87	6800	350	--
DEC											
01...	1100	336	1090	8.0	1.5	--	10.3	74	E25000	6300	--
JAN											
05...	1000	325	1080	7.8	1.5	6	11.5	82	17000	9600	250
FEB											
01...	1200	260	1060	7.6	.5	--	10.8	75	3800	12000	--
MAR											
01...	1630	2480	515	7.5	2.5	--	12.4	90	13000	8300	--
APR											
13...	1100	1020	690	7.5	15.5	2	8.8	88	25000	3200	180
MAY											
11...	1300	484	920	7.5	17.0	--	7.5	77	2000	110	--
JUN											
08...	1630	201	1000	7.7	17.0	--	7.3	75	1400	620	--
JUL											
19...	1100	460	860	7.8	26.5	5	5.8	72	5000	4300	210
AUG											
16...	1130	849	860	7.8	23.0	--	7.3	84	870000	1200	--
SEP											
13...	1100	290	1270	8.0	20.0	--	6.7	72	3100	720	--

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
OCT											
06...	88	62	13	79	5.3	147	0	121	3.7	84	120
NOV											
03...	--	--	--	--	--	--	--	--	--	--	--
DEC											
01...	--	--	--	--	--	--	--	--	--	--	--
JAN											
05...	110	70	18	110	5.4	167	0	137	4.2	99	190
FEB											
01...	--	--	--	--	--	--	--	--	--	--	--
MAR											
01...	--	--	--	--	--	--	--	--	--	--	--
APR											
13...	87	51	12	56	4.2	110	0	90	5.6	74	90
MAY											
11...	--	--	--	--	--	--	--	--	--	--	--
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
JUL											
19...	93	60	14	78	4.8	140	0	110	3.6	79	130
AUG											
16...	--	--	--	--	--	--	--	--	--	--	--
SEP											
13...	--	--	--	--	--	--	--	--	--	--	--

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL-DAHL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	TOTAL NITRO-GEN (NO3) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL PHYTO-PLANK-TON (CELLS PER ML)
OCT											
06...	.4	13	483	449	1.9	1.4	3.3	15	.52	5.8	12000
NOV											
03...	--	--	--	--	1.9	1.1	3.0	13	.44	--	8700
DEC											
01...	--	--	--	--	2.1	3.4	5.5	24	.59	--	12000
JAN											
05...	.2	5.4	592	581	2.1	3.1	5.2	23	.68	9.3	4700
FEB											
01...	--	--	--	--	2.5	3.3	5.8	26	.56	--	3200
MAR											
01...	--	--	--	--	1.6	1.8	3.4	15	.29	--	3100
APR											
13...	.2	4.2	385	346	.96	2.8	3.8	17	.31	6.8	4800
MAY											
11...	--	--	--	--	1.8	2.3	4.1	18	.34	--	10000
JUN											
08...	--	--	--	--	3.2	2.1	5.3	23	.55	--	2500
JUL											
19...	.3	8.3	481	444	1.8	1.3	3.1	14	.42	10	36000
AUG											
16...	--	--	--	--	2.0	1.4	3.4	15	.37	--	--
SEP											
13...	--	--	--	--	4.6	1.4	6.0	27	.70	--	--

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

ANALYSES OF MINOR ELEMENTS

DATE	TIME	TOTAL ARSENIC (AS) (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DISSOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DISSOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT 06...	0930	3	3	2	2	10	<10	1	0	10	10	550
JAN 05...	1000	3	2	2	1	<10	<10	0	0	10	10	690
APR 13...	1100	1	2	0	0	10	0	0	0	18	5	1900
JUL 19...	1100	4	4	0	0	20	4	0	0	12	5	2800

DATE	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
OCT 06...	190	3	3	80	70	<.5	<.5	0	0	20	20
JAN 05...	40	12	1	200	100	<.5	<.5	0	0	40	30
APR 13...	30	13	0	160	120	.0	.0	0	0	30	10
JUL 19...	20	15	6	150	60	.0	.0	0	0	40	10

ANALYSES OF PESTICIDES

DATE	TIME	TOTAL ALDRIN (UG/L)	TOTAL ATRAZINE (UG/L)	ATRAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL CHLORDANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DIAZINON (UG/L)	TOTAL DIELDRIN (UG/L)
NOV 03...	1300	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 01...	1200	ND	ND	--	ND	ND	ND	ND	--	ND
MAY 11...	1300	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 02...	1600	ND	--	--	ND	ND	ND	ND	ND	ND

DATE	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)	TOTAL HEPTACHLOR (UG/L)	TOTAL HEPTACHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALATHION (UG/L)	TOTAL METHOXYCHLOR (UG/L)	TOTAL METHYL PARATHION (UG/L)	TOTAL METHYL TRITHION (UG/L)	TOTAL PARATHION (UG/L)
NOV 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 01...	ND	--	ND	ND	ND	--	ND	--	--	--
MAY 11...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 02...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	SIMAZINE TOTAL COULSON COND. (UG/L)	SIMAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL TOXAPHENE (UG/L)	TOTAL TRITHION (UG/L)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MATERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MATERIAL (UG/KG)
NOV 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 01...	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 11...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 02...	--	--	ND	ND	ND	--	ND	--	ND	--

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

SUSPENDED SEDIMENT RECORDS

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM
FEB							
24...	1645	7330	1710	33800	44	51	61
APR							
02...	1715	4980	1140	15300	26	38	52

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
FEB							
24...	74	87	93	97	100	--	--
APR							
02...	66	80	94	98	99	99	100

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT					
06...	0930	384	17.5	10	10
NOV					
03...	1300	480	0.5	8	10
DEC					
01...	1100	336	1.5	7	6.4
JAN					
05...	1000	325	1.5	10	8.8
FEB					
01...	1200	260	.5	8	5.6
MAR					
01...	1630	2480	2.5	330	2210
APR					
13...	1100	1020	15.5	60	165
MAY					
11...	1300	484	17.0	12	16
JUN					
08...	1630	201	17.0	8	4.3
JUL					
19...	1100	460	20.5	65	81
AUG					
16...	1130	840	25.0	68	154
SEP					
13...	1100	290	20.0	10	7.8

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29					[illegible]	[illegible]	[illegible]	[illegible]	---	---	[illegible]	[illegible]
30					[illegible]	[illegible]	[illegible]	[illegible]	---	---	[illegible]	[illegible]
31					[illegible]	[illegible]	[illegible]	[illegible]	---	---	[illegible]	[illegible]
TOTAL					---	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	---	---	[illegible]	[illegible]	---	---	[illegible]	[illegible]	[illegible]	[illegible]	---	---
TOTAL	---	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]

TOTAL LOAD FOR PERIOD [illegible] TONS.

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	887	808	810	735	1230	1070	1140	1070	1090	1050	531	510
2	887	547	1090	774	1080	1000	1070	936	1070	1040	600	522
3	816	687	990	867	1100	972	1020	972	1140	1080	609	528
4	894	724	885	801	1150	1010	1080	993	1230	1100	753	561
5	1100	810	912	864	1160	1040	1110	1070	1650	1240	744	604
6	1070	765	951	840	1150	1050	1130	1050	1670	1490	732	636
7	1060	780	906	765	1420	1120	1200	1100	1420	1300	672	627
8	882	732	863	747	1320	1130	1210	1100	1310	1180	600	561
9	909	717	1310	855	1390	1230	1230	1130	1390	1220	627	600
10	753	678	1370	1130	1240	1120	1190	1090	1520	1350	687	624
11	861	690	1260	1040	1630	1180	1220	1110	2060	1530	741	663
12	861	780	1230	1040	1140	999	1240	1170	3000	2010	891	660
13	963	747	1310	1180	1100	975	1220	1110	2600	1940	756	563
14	1030	903	1140	1040	1130	1010	1360	1130	1910	1600	624	570
15	1250	1080	1040	888	1200	1040	1250	1140	1590	1530	588	552
16	1280	1030	882	834	1200	1080	1420	1210	1530	1350	576	525
17	1100	994	1070	882	1190	1030	1420	1230	1330	1240	555	531
18	1160	1000	1030	870	1180	1010	1460	1280	1250	1080	606	459
19	1180	1040	870	849	1050	948	1270	1150	1080	978	537	474
20	1230	994	867	852	1410	993	1160	1110	1050	957	576	513
21	1580	930	---	---	1150	1070	1170	1120	1150	1060	567	537
22	1400	1080	930	867	1380	1110	1190	1130	1300	1050	576	531
23	1340	1040	963	906	1380	1220	1190	1130	1300	735	597	540
24	1080	900	1180	960	1330	1190	1260	1190	720	567	588	558
25	870	705	1190	993	1310	1170	1310	1020	618	600	594	534
26	1080	762	1190	990	1290	1170	1490	1320	612	585	600	549
27	1200	1080	1200	1050	1220	1080	1530	1400	615	582	633	585
28	1040	849	1060	930	1220	1120	1490	1380	585	516	648	603
29	1020	903	1050	918	1190	1080	1380	1270	---	---	624	573
30	915	795	1150	933	1150	1060	1300	1210	---	---	615	585
31	939	867	---	---	1130	1080	1230	1050	---	---	663	558
MONTH	1580	547	1370	735	1630	948	1530	936	3000	516	891	459

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	702	648	771	666	1490	1250	755	630	1290	834	1280	954
2	708	645	866	705	1330	1040	807	684	1340	1020	1550	954
3	618	645	867	720	1600	1250	903	813	1500	1210	1400	1090
4	594	480	810	720	1310	1190	930	807	1390	1080	1210	1070
5	690	570	780	687	1390	1210	1130	888	1490	960	1250	1190
6	594	531	780	705	1300	1100	1120	1050	1670	750	1380	1240
7	612	570	747	708	1190	1020	1130	747	930	576	1430	1290
8	612	570	771	735	1090	999	882	687	837	561	1340	1090
9	609	561	771	736	1160	885	1080	777	1110	858	1580	1300
10	744	618	795	753	981	801	1290	1100	1250	810	1450	1290
11	708	645	924	879	1010	801	1340	1100	981	549	1550	1290
12	666	642	897	834	1200	1020	1430	788	732	618	1610	1250
13	705	624	1020	900	1310	1200	1130	630	798	471	1270	1120
14	720	624	1120	972	1310	1220	1310	1110	576	324	1210	522
15	894	711	1280	1030	1390	1280	1130	1070	867	588	921	687
16	876	637	1240	1100	1410	1220	1150	930	867	672	927	549
17	948	636	1360	1190	1330	1120	1120	690	670	630	687	522
18	891	631	1360	1280	1240	987	942	636	891	699	762	609
19	909	685	1390	1250	918	822	867	588	810	768	783	672
20	1040	885	1500	1370	1070	957	948	780	888	741	813	624
21	1040	981	1500	1250	1120	1090	1200	873	1110	642	861	630
22	1090	1010	1670	1300	1110	972	1380	1050	885	516	945	648
23	1010	863	1700	1490	1210	981	1350	987	705	603	945	867
24	678	621	1620	1190	1310	1150	1390	1190	636	633	1050	909
25	825	681	1510	1150	1290	1100	1250	723	915	777	1030	855
26	828	753	1220	1070	1270	1150	963	771	948	753	1130	768
27	780	654	1340	1230	1330	1100	1090	903	1030	945	1070	930
28	687	633	1310	1180	1360	981	1000	984	1220	948	987	948
29	756	624	1340	1190	1010	741	1310	1070	1130	975	1180	945
30	684	630	1420	1240	948	570	1340	909	1020	861	1180	1040
31	---	---	1340	1220	---	---	1380	870	1240	969	---	---
MONTH	1090	480	1700	666	1600	570	1430	588	1670	324	1580	522
YEAR	3000	324										

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	7.7	8.3	7.7	8.1	7.2	---	---	7.9	7.3	7.8	7.5
2	8.0	7.7	8.2	7.8	8.1	7.6	---	---	7.9	7.7	7.8	7.4
3	8.0	7.7	8.2	7.7	8.2	7.2	---	---	7.9	7.5	7.8	7.5
4	8.1	7.8	8.2	7.8	8.0	7.7	---	---	8.0	7.3	7.8	7.6
5	8.1	7.8	8.0	7.7	8.0	7.7	---	---	8.1	8.0	7.8	7.7
6	8.0	7.8	8.0	7.7	8.0	7.6	---	---	8.1	8.0	7.9	7.5
7	8.0	7.8	8.0	7.7	7.8	7.5	---	---	8.1	8.0	7.8	7.6
8	7.9	7.8	8.0	7.8	8.0	7.5	---	---	8.2	7.8	7.8	7.5
9	8.0	7.9	8.0	7.6	8.1	7.5	---	---	8.1	7.9	7.8	7.4
10	8.0	7.7	7.9	7.6	---	---	---	---	8.0	7.8	7.9	7.4
11	8.2	7.9	8.0	7.6	---	---	---	---	8.0	7.8	7.9	7.4
12	8.2	7.8	8.0	7.7	---	---	---	---	8.0	7.8	7.9	7.6
13	8.2	7.8	8.2	7.6	---	---	---	---	7.9	7.7	7.8	7.5
14	8.2	7.8	8.2	7.6	---	---	---	---	8.0	7.9	7.8	7.5
15	8.2	7.7	8.1	7.6	---	---	---	---	8.0	7.7	7.8	7.3
16	8.2	7.8	8.1	7.5	---	---	---	---	7.9	7.7	7.8	7.4
17	8.2	7.9	8.0	7.4	---	---	---	---	7.9	7.7	7.8	7.4
18	8.3	8.0	7.9	7.6	---	---	---	---	7.9	7.8	7.8	7.7
19	8.3	8.0	8.0	7.5	---	---	---	---	7.9	7.8	7.8	7.4
20	8.2	7.8	7.9	7.5	---	---	---	---	7.9	7.8	7.7	7.5
21	8.1	7.9	7.9	7.6	---	---	7.8	7.5	7.9	7.8	7.8	7.3
22	8.3	7.9	8.3	7.8	---	---	8.0	7.8	7.9	7.7	7.8	7.6
23	8.3	7.9	8.2	7.8	---	---	8.0	7.8	7.9	7.6	7.9	7.5
24	8.2	7.8	8.1	7.7	---	---	8.0	7.9	7.7	7.6	7.9	7.6
25	8.0	7.8	7.9	7.6	---	---	8.0	7.9	7.7	7.6	7.9	7.6
26	8.2	8.0	7.8	7.6	---	---	8.0	7.7	7.7	7.5	7.9	7.5
27	8.3	7.9	7.8	7.5	---	---	8.1	7.6	7.7	7.6	7.9	7.5
28	8.3	7.9	8.0	7.7	---	---	8.1	7.7	7.8	7.5	7.9	7.7
29	8.2	7.8	8.1	7.7	---	---	8.0	7.7	---	---	7.9	7.5
30	8.2	7.9	8.1	7.7	---	---	8.0	7.9	---	---	7.8	7.4
31	7.9	7.8	---	---	---	---	8.0	7.9	---	---	7.9	7.8
MONTH	8.3	7.7	8.3	7.4	8.2	7.2	8.1	7.5	8.2	7.3	7.9	7.3

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.9	7.5	8.2	7.5	7.5	7.4	7.6	7.2	7.9	7.8	8.0	7.7
2	7.9	7.5	8.1	7.8	7.5	7.3	7.8	7.5	8.0	7.8	8.1	7.9
3	7.8	7.4	8.2	7.5	7.6	7.4	7.7	7.5	8.0	7.8	8.2	7.9
4	7.8	7.5	8.1	7.6	7.6	7.5	7.7	7.4	8.0	7.8	8.3	8.0
5	7.9	7.5	8.1	7.6	7.5	7.5	7.8	7.2	7.9	7.5	8.4	8.1
6	7.9	7.6	8.0	7.6	7.6	7.5	7.7	7.4	7.9	7.6	8.5	8.1
7	7.9	7.6	8.2	7.6	7.7	7.6	7.7	7.6	7.7	7.4	8.3	8.2
8	7.9	7.6	8.2	7.5	7.7	7.6	7.5	7.3	7.9	7.7	8.3	8.1
9	8.0	7.5	8.2	8.0	7.7	7.5	7.7	7.3	8.0	7.8	8.2	8.1
10	8.0	7.5	8.1	7.5	7.6	7.5	7.8	7.6	7.8	7.6	8.2	8.1
11	7.9	7.4	8.1	7.4	7.7	7.6	7.8	7.6	7.9	7.5	8.3	8.1
12	7.9	7.3	8.0	7.5	7.7	7.6	7.6	7.3	7.9	7.5	8.3	8.1
13	7.9	7.4	8.0	7.4	7.7	7.6	7.8	7.3	7.9	7.6	8.2	8.0
14	7.9	7.6	8.1	7.4	7.7	7.6	7.8	7.6	7.8	7.5	8.0	7.7
15	7.9	7.5	8.1	7.5	7.7	7.5	---	---	7.9	7.3	8.1	8.0
16	7.9	7.6	8.1	7.5	7.8	7.5	---	---	7.9	7.7	8.0	7.6
17	7.9	7.4	8.1	7.5	7.7	7.5	---	---	7.9	7.5	8.1	7.6
18	7.9	7.4	8.0	7.5	7.6	7.3	---	---	7.9	7.8	8.2	7.9
19	7.9	7.4	8.1	7.5	7.7	7.5	---	---	8.0	7.8	8.0	7.8
20	7.9	7.3	8.1	7.5	7.6	7.6	7.8	7.2	8.0	7.8	8.1	7.9
21	7.8	7.4	8.0	7.6	7.8	7.6	7.8	7.7	7.9	7.8	8.1	8.0
22	7.8	7.6	8.1	7.6	7.7	7.5	7.8	7.6	7.9	7.6	8.1	8.0
23	7.7	7.5	8.0	7.7	7.8	7.5	7.9	7.8	8.0	7.7	8.1	8.0
24	7.8	7.6	---	---	7.7	7.5	8.0	7.9	7.9	7.8	8.1	8.0
25	7.8	7.6	---	---	7.7	7.3	8.0	7.6	8.0	7.7	8.0	8.0
26	7.9	7.4	---	---	7.6	7.3	7.9	7.8	7.9	7.7	8.3	7.9
27	8.2	7.3	7.6	7.3	7.9	7.3	8.1	7.9	7.9	7.7	8.2	8.1
28	8.2	8.1	7.6	7.4	7.5	7.4	8.0	7.8	8.1	7.8	8.1	8.0
29	8.2	7.6	7.6	7.4	7.6	7.3	7.9	7.8	8.1	7.8	8.1	8.1
30	8.2	7.5	7.6	7.4	7.6	7.3	7.9	7.7	8.0	7.9	8.1	8.0
31	---	---	7.7	7.4	---	---	7.9	7.7	7.9	7.6	---	---
MONTH	8.2	7.3	8.2	7.3	7.9	7.3	8.1	7.2	8.1	7.3	8.5	7.6
YEAR	8.5	7.2										

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	15.0	9.0	8.0	2.0	1.5	0.0	0.0	0.5	0.0	2.5	1.5
2	17.5	15.5	8.5	7.0	2.5	1.5	0.0	0.0	0.5	0.0	3.0	1.0
3	18.0	16.0	10.0	8.5	1.5	0.5	1.5	0.0	1.0	0.5	3.5	2.0
4	17.5	15.5	9.0	8.0	2.0	0.5	2.0	1.5	3.0	1.0	5.0	4.0
5	18.0	16.0	8.5	7.5	2.0	1.0	2.0	1.5	2.5	1.0	4.5	3.5
6	18.0	17.0	8.5	7.5	2.5	1.0	1.5	1.0	1.0	0.0	5.0	3.5
7	17.0	16.0	8.5	7.5	3.5	2.5	2.0	1.0	1.5	0.0	4.5	3.5
8	16.0	15.0	7.0	5.5	2.0	1.5	1.5	1.0	0.5	0.0	5.5	3.5
9	15.0	12.0	6.5	5.0	2.0	1.5	1.5	1.0	1.5	0.0	7.5	5.0
10	13.0	12.0	7.5	6.5	3.5	2.0	1.5	0.5	4.0	1.5	8.5	6.5
11	14.5	12.5	7.5	6.5	3.5	2.5	0.5	0.0	5.5	3.5	9.0	7.5
12	14.5	12.5	7.0	6.0	3.5	2.5	0.5	0.0	4.5	3.5	9.5	8.5
13	16.0	14.0	7.0	5.5	3.0	1.5	0.5	0.0	3.5	2.5	9.5	9.0
14	14.5	13.5	6.5	5.5	2.5	1.0	0.5	0.0	2.5	2.5	9.0	8.5
15	14.5	13.0	6.0	5.0	3.5	2.0	2.0	0.0	2.5	1.5	10.0	7.5
16	13.5	12.5	5.5	4.5	4.0	3.0	1.5	0.0	2.0	1.0	10.0	8.5
17	12.5	10.5	5.5	4.5	4.0	4.0	0.5	0.0	2.0	0.5	9.5	8.0
18	10.5	9.5	6.5	5.0	4.5	3.5	0.5	0.0	2.5	1.0	9.0	4.5
19	10.0	9.0	7.5	6.0	5.5	3.5	0.0	0.0	4.0	2.5	6.5	4.5
20	11.0	10.0	6.5	5.5	6.0	3.0	0.5	0.0	3.0	2.5	6.0	5.0
21	10.5	9.5	6.5	5.5	3.0	1.0	0.5	0.0	3.0	2.0	7.0	5.0
22	9.5	8.0	5.5	4.5	1.0	0.5	0.5	0.0	4.0	2.0	7.0	5.0
23	9.0	7.0	4.5	4.0	2.0	1.0	0.5	0.0	4.0	2.0	6.5	4.5
24	10.5	9.0	3.5	3.0	1.5	0.5	2.0	0.5	2.5	2.0	6.0	4.5
25	11.0	10.5	5.0	3.0	2.0	1.0	3.0	2.0	2.5	1.0	7.0	4.5
26	10.0	9.0	8.0	5.0	2.5	1.5	3.5	2.5	2.5	2.0	8.0	5.0
27	9.5	8.0	9.5	7.0	1.5	0.5	2.0	0.5	3.0	2.5	9.0	6.5
28	9.5	8.5	8.5	6.0	1.5	0.5	0.5	0.0	2.0	2.0	10.0	8.5
29	10.0	8.0	5.5	2.0	1.5	0.0	0.5	0.0	---	---	13.0	10.0
30	9.5	8.5	2.0	1.0	0.0	0.0	0.5	0.0	---	---	14.5	10.0
31	9.5	8.5	---	---	0.0	0.0	0.5	0.0	---	---	14.0	11.5
MONTH	18.0	7.0	10.0	1.0	6.0	0.0	3.5	0.0	5.5	0.0	14.5	1.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	13.0	11.0	17.5	14.5	23.0	20.0	24.0	20.5	26.0	24.0	27.5	24.5
2	12.0	10.5	17.5	16.0	20.0	17.0	25.0	22.0	26.0	23.0	27.0	25.5
3	13.0	11.5	19.0	16.0	19.5	15.5	25.0	22.0	26.5	23.0	27.0	25.5
4	12.0	11.0	18.0	16.5	21.0	16.0	24.5	22.5	27.5	24.0	25.5	24.0
5	11.5	10.0	20.0	16.5	20.5	19.0	27.5	23.5	27.0	25.0	26.0	23.5
6	9.5	8.5	20.5	19.5	19.0	16.0	29.5	26.5	26.5	24.5	25.0	24.0
7	8.5	7.5	21.0	19.0	17.0	15.0	30.0	26.5	25.5	23.5	25.0	22.0
8	8.5	7.0	19.0	17.0	17.0	14.5	28.0	25.5	25.5	24.5	25.0	22.0
9	9.5	6.5	16.5	14.5	17.0	13.5	28.0	25.5	26.5	24.5	25.5	23.0
10	11.0	7.5	15.5	13.5	19.0	15.0	27.5	24.5	26.0	25.5	24.5	22.5
11	13.5	10.5	17.0	13.0	19.0	17.0	27.0	24.5	27.0	24.5	23.0	21.0
12	16.0	13.0	16.5	14.5	18.5	17.5	28.0	25.0	26.5	23.5	21.5	19.5
13	17.5	15.0	19.0	15.5	20.0	16.5	28.0	24.0	24.5	22.5	20.5	19.5
14	17.5	16.0	21.0	18.0	23.0	19.0	28.5	25.5	23.0	21.0	21.5	20.5
15	16.5	14.5	20.5	17.5	23.0	20.5	29.0	26.0	24.5	22.0	21.0	19.0
16	16.5	14.5	21.0	17.5	24.0	20.5	29.0	27.5	24.5	22.5	19.5	18.5
17	16.5	14.0	22.5	19.5	24.5	22.0	27.5	25.0	25.0	24.0	21.5	19.5
18	17.5	15.5	23.5	21.0	23.0	20.0	28.5	26.0	24.0	22.5	22.0	21.0
19	19.0	16.0	24.5	21.5	24.0	21.5	28.0	24.5	22.5	21.0	22.0	21.0
20	20.0	18.0	25.5	21.5	23.0	21.5	29.5	25.5	23.0	20.5	22.0	20.5
21	20.5	19.0	25.5	22.5	24.0	20.5	29.0	28.0	22.0	20.0	20.5	19.5
22	20.5	19.0	26.0	22.5	24.0	19.5	28.0	26.0	21.5	19.5	20.5	19.0
23	19.0	16.0	25.0	22.5	24.0	20.0	27.0	24.5	22.0	20.0	21.5	19.5
24	16.0	13.5	23.5	22.0	24.0	21.0	26.5	24.0	22.0	21.0	22.0	21.0
25	13.5	13.0	25.0	22.0	26.0	22.5	26.0	24.0	22.0	19.5	23.0	21.0
26	15.0	12.5	24.5	22.0	27.0	23.5	25.0	22.0	23.0	19.5	22.5	21.0
27	16.5	13.0	24.0	20.5	26.5	23.0	24.0	22.0	25.5	22.5	21.5	20.0
28	16.5	13.0	24.5	20.0	26.0	24.5	25.0	21.5	27.5	25.0	20.5	20.0
29	15.0	12.0	23.5	20.5	25.0	22.5	25.0	23.5	27.0	25.0	20.0	18.5
30	16.5	13.0	22.5	20.0	24.0	21.5	26.0	22.0	26.0	24.0	20.5	19.0
31	---	---	24.0	20.0	---	---	26.5	24.0	26.5	24.0	---	---
MONTH	20.5	6.5	26.0	13.0	27.0	13.5	30.0	20.5	27.5	19.5	27.5	18.5
YEAR	30.0	0.0										

04208000 CUYAHOGA RIVER AT INDEPENDENCE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.9	8.0	10.6	9.2	10.3	10.0	11.5	11.2	10.8	10.4	13.0	12.2
2	8.6	7.8	10.7	9.8	10.3	9.8	11.4	11.2	10.3	9.9	12.6	12.1
3	8.5	7.6	10.1	9.4	10.7	9.8	13.0	11.1	10.2	9.7	12.6	11.9
4	8.7	7.6	10.2	9.3	10.5	10.1	11.8	11.1	10.4	9.9	12.1	11.3
5	8.7	7.4	10.2	9.5	10.5	10.1	11.6	11.1	10.8	10.1	12.1	11.3
6	7.9	7.0	10.2	9.3	10.4	9.8	11.5	11.0	11.4	10.6	12.5	11.8
7	8.5	6.9	10.2	9.4	10.0	7.3	11.3	10.7	11.7	11.1	12.7	11.6
8	8.7	7.2	11.0	9.9	10.8	9.9	11.4	10.7	11.7	11.4	12.1	11.5
9	8.8	7.6	11.6	10.2	11.8	10.4	11.4	10.9	11.3	10.9	11.7	11.0
10	9.0	7.8	10.3	9.8	11.2	10.7	11.3	10.7	10.8	10.0	11.3	10.7
11	9.4	8.6	10.7	9.8	11.2	10.6	12.0	11.0	9.9	8.8	11.2	10.4
12	9.2	8.2	10.8	10.1	11.1	10.7	12.0	11.6	10.1	8.3	10.6	9.9
13	9.1	7.8	11.0	10.3	11.3	10.7	12.1	11.8	10.7	9.5	10.9	9.7
14	9.1	7.7	10.8	10.4	11.6	11.1	11.8	11.0	11.0	10.5	11.2	10.3
15	9.2	7.8	10.9	10.4	11.2	10.7	11.3	10.6	11.3	11.0	11.2	10.2
16	9.8	8.2	11.0	10.5	10.7	10.3	11.9	11.0	11.3	11.2	11.3	10.6
17	10.0	8.0	10.8	10.0	10.3	10.1	12.2	11.6	11.4	11.2	11.3	10.8
18	10.5	9.1	10.3	9.6	10.6	10.1	11.9	11.6	11.4	11.0	12.0	10.7
19	10.7	9.4	10.0	9.3	10.7	9.9	11.8	11.1	11.1	10.9	12.5	11.6
20	9.8	8.6	10.0	9.3	10.5	9.6	11.1	10.8	11.3	11.0	12.5	11.7
21	10.0	8.6	10.0	9.3	11.3	9.7	10.7	10.0	11.7	11.2	12.7	11.9
22	10.9	8.4	10.2	9.3	11.6	11.3	10.8	10.0	11.4	11.0	12.4	11.5
23	11.2	9.7	10.3	9.7	11.3	11.0	11.5	10.5	12.0	10.6	13.4	12.0
24	10.0	8.9	10.2	9.7	11.4	10.9	11.3	10.6	12.2	11.7	13.5	12.3
25	9.4	8.4	9.9	9.3	11.3	10.8	10.7	10.4	12.5	11.7	13.4	12.4
26	10.3	9.3	9.2	8.3	11.2	10.7	10.6	10.0	12.7	12.5	13.5	12.0
27	10.6	9.5	8.3	7.6	11.7	11.1	11.0	10.0	12.6	12.2	12.6	11.4
28	10.7	9.4	8.6	8.0	11.4	10.8	11.3	10.7	12.8	12.3	11.6	10.7
29	10.6	9.4	9.9	8.6	11.2	10.7	11.4	11.0	---	---	10.8	10.3
30	10.1	9.4	10.4	9.9	11.6	11.1	11.2	11.1	---	---	10.7	9.6
31	9.5	8.8	---	---	11.7	11.4	11.1	10.8	---	---	10.6	9.4
MONTH	11.2	6.9	11.6	7.6	11.8	7.3	13.0	10.0	12.8	8.3	13.5	9.4

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	10.4	9.4	8.6	5.4	4.1	7.2	4.6	6.6	5.3	6.8	4.6
2	10.7	10.1	8.8	7.7	5.1	3.5	7.7	5.7	7.2	6.1	6.3	4.9
3	10.9	10.0	9.2	7.2	7.2	5.1	7.5	6.1	7.3	5.9	8.1	4.5
4	11.2	10.2	8.9	7.0	7.0	5.3	6.6	5.9	7.5	5.8	9.5	5.2
5	11.0	10.2	7.3	6.4	5.6	4.6	7.0	5.4	6.7	3.4	9.8	5.9
6	11.8	10.6	6.9	6.3	6.2	5.1	7.6	5.1	6.1	5.2	10.3	5.9
7	12.1	11.5	7.0	6.1	7.6	5.6	7.1	4.6	6.6	2.7	8.9	6.3
8	12.2	11.5	7.2	6.3	7.6	6.2	5.7	4.5	7.0	6.0	8.4	5.8
9	12.3	11.4	7.7	6.8	7.8	5.0	7.5	4.9	7.5	6.0	8.5	5.6
10	11.9	10.8	7.8	7.1	7.8	5.2	8.2	5.3	6.5	4.8	7.7	5.5
11	11.0	10.2	7.6	6.4	7.5	6.1	7.7	5.9	6.5	3.0	8.4	5.9
12	10.0	9.3	7.4	6.0	6.5	5.3	6.2	4.9	7.1	6.2	8.4	6.5
13	9.4	8.6	7.4	5.9	7.4	5.3	7.4	5.1	7.5	6.2	7.4	6.6
14	9.0	8.4	6.9	5.2	7.4	5.1	8.2	5.7	7.5	5.7	6.8	3.0
15	9.2	8.6	7.2	4.8	7.0	4.4	10.3	5.6	7.8	7.2	8.2	6.8
16	9.1	8.3	8.0	4.8	7.8	4.1	10.2	5.5	7.4	6.8	8.2	7.1
17	8.9	8.4	7.7	4.3	7.0	3.9	7.2	2.6	6.9	4.1	7.9	7.1
18	8.7	7.8	7.8	4.1	5.5	3.4	5.6	4.0	7.2	6.2	7.6	7.1
19	8.5	7.4	8.6	3.9	6.9	5.0	6.3	5.4	7.4	7.0	7.5	6.6
20	7.6	6.5	8.3	3.8	6.9	5.1	6.5	5.7	7.6	6.8	7.5	6.2
21	7.6	6.3	8.3	3.5	7.4	5.2	7.2	5.4	7.4	6.7	7.7	7.0
22	6.5	5.2	9.9	3.4	7.4	4.6	6.8	5.2	7.5	5.4	8.3	7.4
23	8.2	6.4	9.3	3.6	8.0	4.7	8.6	5.5	7.8	7.4	7.8	6.6
24	10.1	8.4	5.7	3.6	7.7	4.5	8.6	5.9	7.5	7.0	7.3	6.2
25	10.1	9.5	6.3	4.4	7.0	4.2	6.7	5.6	7.7	7.0	7.1	5.2
26	10.0	9.3	7.5	3.9	7.3	3.5	7.2	6.2	7.6	6.6	7.6	5.5
27	9.7	8.8	7.5	4.6	9.2	4.1	7.8	6.8	7.2	6.0	7.9	6.3
28	10.1	8.6	7.4	4.5	7.8	3.7	7.5	6.6	6.8	5.6	7.1	6.1
29	10.4	8.9	7.0	3.0	5.9	4.4	6.9	6.0	6.9	5.5	7.8	6.3
30	9.9	9.1	7.6	4.4	6.9	4.4	7.0	5.3	7.2	5.6	7.6	6.3
31	---	---	8.3	4.5	---	---	7.5	4.4	6.3	5.2	---	---
MONTH	12.3	5.2	9.9	3.0	9.2	3.4	10.3	2.6	7.8	2.7	10.3	3.0
YEAR	13.5	2.6										

04208502 BIG CREEK AT CLEVELAND, OH

LOCATION.--Lat 41°27'01", long 81°43'18", Cuyahoga County, Hydrologic Unit 04110002, on right bank 8 ft (2 m) downstream from footbridge in Brookside Park, 0.2 mi (0.3 km) upstream from bridge on Fulton Road and 2.5 mi (4.0 km) upstream from mouth.

DRAINAGE AREA.--35.3 mi² (91.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 620.7 ft (189.19 m) above mean sea level (levels by Corps of Engineers).

REMARKS.--Records fair except those for winter periods, which are poor. Flow slightly regulated by industry upstream from station.

AVERAGE DISCHARGE.--5 years, 51.4 ft³/s (1.456 m³/s), 19.77in/yr (502 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,100 ft³/s (258 m³/s) Aug. 24, 1975, gage height, 16.20 ft (4.938 m) (from floodmarks), from rating curve extended above 500 ft³/s (14.2 m³/s) on basis of slope-area measurements of peak flow; minimum daily, 2.3 ft³/s (0.065 m³/s) Sept. 16-17, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,200 ft³/s (34.0 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 30	2300	*1380	39.1	*8.27	2.521	Aug. 13	2245	1200	34.0	7.67	2.338
July 29	2100	1320	37.4	8.06	2.457						

Minimum daily discharge, 8.0 ft³/s (0.23 m³/s) May 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	46	16	13	13	30	28	22	79	202	100	14
2	16	28	16	13	13	26	330	120	29	34	18	16
3	16	27	15	13	13	25	247	53	15	21	15	16
4	15	23	15	13	13	66	68	137	10	108	21	14
5	12	21	17	13	13	44	137	102	48	33	272	16
6	20	21	34	13	13	29	56	49	71	14	165	14
7	55	21	114	13	13	29	40	30	31	60	207	10
8	20	21	31	13	13	29	31	25	23	40	155	11
9	160	21	22	13	13	25	27	22	275	18	84	13
10	49	29	24	13	15	23	29	20	82	14	82	21
11	21	33	33	14	25	21	25	19	20	13	82	15
12	16	23	22	15	80	135	24	18	12	21	350	15
13	14	18	18	16	130	277	26	17	11	110	158	192
14	13	18	17	15	65	56	25	16	10	25	530	177
15	13	19	17	14	41	38	23	15	9.5	44	85	65
16	12	18	16	14	25	32	21	15	21	55	45	172
17	11	18	17	14	23	25	21	14	48	126	106	72
18	11	19	15	14	21	646	23	13	114	79	33	27
19	10	18	16	14	20	122	21	12	28	193	21	23
20	72	18	69	14	20	165	65	12	17	35	18	20
21	39	18	30	13	20	68	35	25	37	25	92	27
22	18	22	20	13	68	272	100	52	16	22	55	17
23	16	20	17	13	400	92	160	82	12	16	20	16
24	80	18	16	13	435	59	59	49	10	14	18	16
25	55	18	14	13	13	38	162	30	92	255	16	18
26	32	65	14	13	13	31	100	20	110	20	14	21
27	49	33	13	13	13	28	48	14	30	14	14	15
28	29	21	13	13	13	207	38	11	65	13	15	14
29	21	18	13	13	---	122	29	9.0	88	145	23	14
30	22	17	13	13	---	52	23	8.0	257	80	17	13
31	126	---	13	13	---	33	---	59	---	25	14	---
TOTAL	1062	710	720	417	1557	2845	2021	1090.0	1670.5	1874	2845	1084
MEAN	34.3	23.7	23.2	13.5	55.6	91.8	67.4	35.2	55.7	60.5	91.8	36.1
MAX	160	65	114	16	435	646	330	137	275	255	530	192
MIN	10	17	13	13	13	21	21	8.0	9.5	13	14	10
CFSM	.97	.67	.66	.38	1.58	2.60	1.91	1.00	1.58	1.71	2.60	1.02
IN.	1.12	.75	.76	.44	1.64	3.00	2.13	1.15	1.76	1.97	3.00	1.14

CAL YR 1976 TOTAL 17046.1 MEAN 46.6 MAX 1110 MIN 4.2 CFSM 1.32 IN 17.96
WTR YR 1977 TOTAL 17895.5 MEAN 49.0 MAX 646 MIN 8.0 CFSM 1.39 IN 18.86

04208502 BIG CREEK AT CLEVELAND, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
15...	1800	34	1300	8.2	14.5	9.6	93	7.0	310	180	90	21
JUL												
26...	1215	16	770	8.3	23.5	9.3	110	4.5	200	80	59	12

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
15...	150	7.5	162	0	133	1.6	170	250	.9	9.8	779	1.1
JUL												
26...	80	7.4	134	2	117	1.1	110	92	1.5	9.0	441	.38

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
15...	.13	.83	.37	2	10	14	50	40	260	.0	140	6.2
JUL												
26...	.14	.45	.35	1	<10	5	10	14	100	.0	80	7.0

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH

LOCATION.--Lat 41°29'17", long 8°41'07", in T.7 N., R.12 W., Cuyahoga County, Hydrologic Unit 04110002, on left bank just upstream from bridge on West Third Street in Cleveland, 3.0 mi (4.8 km) upstream from mouth, and 1.2 mi (1.9 km) downstream from turning basin.

DRAINAGE AREA.--798 mi² (2,067 km²).

PERIOD OF RECORD.-- Water years 1966 to current year.

PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: November 1966 to current year.
pH: November 1966 to current year.
WATER TEMPERATURES: November 1966 to current year.
DISSOLVED OXYGEN: November 1966 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. No discharge records available.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos July 16, 17, 1977; minimum, 318 micromhos July 12, 1976.
pH: Maximum, 9.3 units Sept. 14, 1969; minimum, 4.3 units May 16, 1969.
WATER TEMPERATURES: Maximum, 35.0°C July 24, 1967; minimum, 1.0°C Jan. 1, 1969.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher on several days during 1968, 1970; minimum, 0.0 mg/L on many days during 1967, 1968, 1971 to 1974, 1977.

EXTREMES FOR CURRENT YEAR:

SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Feb. 12, 13; minimum, 417 micromhos Sept. 19.
pH: Maximum, 8.3 units Nov. 9, Feb. 3; minimum, 6.9 units Sept. 27.
WATER TEMPERATURES: Maximum, 32.5°C July 16, 17; minimum, 3.0°C Feb. 25.
DISSOLVED OXYGEN: Maximum, 12.1 mg/L Feb. 28, Mar. 1; minimum, 0.0 mg/L July 11, Aug. 4, Sept. 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 15...	1100	2210	640	7.6	10.0	9.6	85	4.4	180	87	52	11
JUL 26...	1430	950	990	7.3	26.5	1.8	22	3.3	210	99	64	13

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 15...	58	5.0	108	0	89	4.3	74	100	.4	7.2	361	1.0
JUL 26...	95	8.2	140	0	115	11	110	150	.7	8.2	518	1.9

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 15...	.09	1.8	.18	4	10	31	110	12	10	.0	10	1.4
JUL 26...	.34	5.6	.21	2	<10	5	20	7	110	.0	70	6.3

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	906	840	900	825	1220	1140	1480	1460	1310	1220	657	639
2	903	816	888	855	1240	1200	1460	1400	1240	1170	687	633
3	822	789	1070	885	1320	1300	1390	1190	1170	1150	711	687
4	885	813	1110	1030	1330	1290	1220	1160	1240	1160	921	672
5	921	888	1040	984	1330	1230	1370	1220	1380	1250	930	843
6	987	933	1030	1000	1410	1330	1390	1350	1510	1390	885	810
7	1050	993	1030	1020	1890	1350	1340	1300	1530	1510	813	777
8	1000	957	1040	975	1930	1640	1310	1280	1520	1440	804	768
9	1010	849	987	960	1630	1460	1460	1310	1450	1350	777	744
10	828	711	1140	960	1520	1460	1450	1370	1340	1290	777	753
11	849	801	1270	1150	1570	1430	1370	1290	2620	1300	840	783
12	900	843	1330	1250	1700	1500	1360	1290	3000	2700	966	819
13	1020	909	1270	1210	1550	1270	1370	1360	3000	2410	969	615
14	1030	1010	1270	1220	1270	1160	1370	1340	2390	1910	693	654
15	1070	1010	1270	1180	1210	1160	1350	1310	1900	1700	684	656
16	1120	1070	1180	1060	1240	1210	1500	1320	1760	1680	690	672
17	1220	1120	1070	1050	1270	1220	1510	1500	1720	1580	684	654
18	1220	1160	1050	1010	1260	1230	1500	1460	1560	1440	735	534
19	1160	1130	1120	1070	1240	1210	1460	1360	1450	1340	603	526
20	1180	1110	1110	1060	1230	1160	1370	1350	1330	1200	684	594
21	1130	984	1060	1020	1550	1170	1370	1340	1230	1170	657	618
22	1070	915	1040	1020	1510	1400	1340	1330	1270	1160	717	633
23	1280	1060	1060	1030	1510	1420	1340	1300	1530	1110	663	645
24	1260	1140	1230	1060	1550	1510	1300	1290	1060	744	678	657
25	1110	915	1240	1220	1580	1510	1300	1260	741	714	681	660
26	954	849	1250	1220	1550	1460	1400	1260	732	693	654	624
27	1040	876	1380	1210	1550	1440	1650	1410	753	723	687	648
28	1130	1050	1380	1250	1560	1470	1790	1640	747	654	756	672
29	1140	1040	1240	1140	1500	1450	1790	1670	---	---	708	603
30	1080	1030	1140	1100	1460	1440	1660	1490	---	---	705	656
31	1100	858	---	---	1490	1450	1470	1310	---	---	723	702
MONTH	1280	711	1380	825	1930	1140	1790	1160	3000	654	969	528

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	777	717	750	711	---	---	678	513	1170	1020	1120	1090
2	789	528	795	729	---	---	792	681	1020	882	1220	1110
3	534	465	834	762	---	---	855	795	1180	966	1220	1160
4	597	534	843	777	---	---	891	849	1320	1190	1340	1200
5	639	600	795	720	---	---	861	768	---	---	1350	1260
6	645	618	765	723	---	---	963	822	---	---	1260	1220
7	681	615	819	777	1150	1140	1040	954	---	---	1230	1220
8	675	648	807	789	1180	1150	1040	834	---	---	1280	1200
9	675	648	810	786	1180	852	855	804	---	---	1340	1280
10	738	666	834	792	1010	804	888	849	---	---	1350	1310
11	780	735	882	834	1050	981	999	894	---	---	1380	1320
12	765	738	972	888	1030	1010	1100	1010	---	---	1390	1370
13	774	741	972	936	1070	1030	1130	996	---	---	1380	1220
14	795	765	978	960	1120	1030	1090	819	---	---	1120	708
15	795	762	1040	987	1200	1130	1010	840	---	---	951	765
16	936	798	1070	1030	1250	1200	1120	1020	---	---	940	798
17	954	912	1100	1070	1270	1240	1120	936	---	---	765	594
18	945	900	---	---	1270	918	957	849	---	---	666	549
19	942	903	---	---	807	723	849	597	1060	1000	849	417
20	813	---	1220	1210	873	780	813	603	1000	909	867	816
21	1000	978	1250	1210	987	879	966	828	---	---	876	789
22	1070	990	1260	1210	1040	996	1090	966	---	---	924	831
23	1070	873	1250	1250	1110	1050	1180	1100	783	675	1010	936
24	849	615	1300	1250	1120	1100	1230	1190	843	759	1010	990
25	771	567	1320	1280	1130	1110	1260	1140	906	789	1070	1010
26	846	774	1290	1250	1160	1130	1160	942	978	924	1070	912
27	855	807	---	---	1150	1080	1040	963	1010	957	1070	939
28	816	729	---	---	1120	1090	1100	1030	1040	945	1110	995
29	759	711	---	---	1130	702	1120	897	1080	975	1490	1100
30	777	714	---	---	831	603	975	735	1150	1080	1110	1090
31	---	---	---	---	---	---	1110	843	1140	1100	---	---
MONTH	1070	465	1320	711	1270	603	1260	513	1320	675	1490	417
YEAR	3000	417										

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.5	7.5	7.6	7.4	7.7	7.6	7.8	7.7	7.8	7.8	7.8	7.6
2	7.6	7.5	7.6	7.5	7.6	7.6	7.8	7.7	7.8	7.6	7.7	7.6
3	7.5	7.5	7.5	7.4	7.7	7.6	7.8	7.7	7.8	7.6	7.7	7.5
4	7.5	7.4	7.5	7.4	7.7	7.6	7.8	7.7	7.7	7.6	7.6	7.5
5	7.5	7.4	7.5	7.4	7.7	7.6	7.8	7.7	7.7	7.6	7.7	7.6
6	7.4	7.4	7.5	7.5	7.7	7.6	7.6	7.5	7.8	7.7	7.7	7.6
7	7.5	7.4	7.5	7.4	7.7	7.4	7.7	7.6	7.8	7.7	7.7	7.7
8	7.5	7.4	7.6	7.4	7.6	7.5	7.7	7.6	7.8	7.7	7.8	7.7
9	7.5	7.4	8.3	7.5	7.6	7.5	7.8	7.7	7.8	7.6	7.7	7.6
10	7.5	7.4	8.0	7.7	7.6	7.5	7.8	7.7	7.8	7.7	7.7	7.6
11	7.5	7.4	7.8	7.6	7.6	7.5	7.7	7.6	7.8	7.6	7.7	7.6
12	7.5	7.4	7.6	7.6	7.7	7.5	7.7	7.7	7.7	7.6	7.8	7.6
13	7.5	7.4	7.7	7.6	7.7	7.6	7.8	7.7	7.7	7.6	7.8	7.7
14	7.5	7.5	7.7	7.6	7.7	7.6	7.7	7.7	7.8	7.7	7.8	7.7
15	7.5	7.4	7.7	7.6	7.7	7.6	7.7	7.7	7.9	7.8	7.8	7.6
16	7.5	7.4	7.7	7.6	8.0	7.6	7.7	7.7	7.9	7.7	7.8	7.6
17	7.5	7.4	7.7	7.6	7.7	7.6	7.7	7.7	7.9	7.8	7.9	7.6
18	7.6	7.5	7.6	7.6	7.7	7.6	7.7	7.6	7.9	7.8	7.9	7.6
19	7.6	7.5	7.6	7.5	7.7	7.6	7.7	7.7	7.9	7.6	7.9	7.6
20	7.5	7.4	7.7	7.5	7.6	7.5	7.7	7.6	7.9	7.7	7.9	7.8
21	7.5	7.4	7.6	7.5	7.8	7.5	7.8	7.7	7.9	7.8	7.8	7.7
22	7.5	7.3	7.6	7.5	7.8	7.7	7.7	7.6	7.9	7.8	7.9	7.7
23	7.7	7.5	7.7	7.5	7.7	7.5	7.7	7.6	8.3	7.5	7.8	7.7
24	7.6	7.5	7.7	7.6	7.7	7.7	7.7	7.6	7.8	7.6	7.8	7.8
25	7.5	7.3	7.7	7.5	7.7	7.6	7.7	7.6	7.9	7.8	7.8	7.6
26	7.5	7.4	7.5	7.5	7.6	7.5	7.7	7.6	7.9	7.8	7.8	7.6
27	7.5	7.5	7.5	7.4	7.8	7.6	7.8	7.7	7.9	7.8	7.7	7.6
28	7.6	7.5	7.6	7.4	7.8	7.7	7.8	7.7	7.9	7.6	7.8	7.7
29	7.6	7.4	7.6	7.6	7.8	7.6	7.8	7.8	---	---	7.8	7.7
30	7.5	7.4	7.7	7.5	7.8	7.7	7.9	7.8	---	---	7.6	7.5
31	7.5	7.4	---	---	7.8	7.7	8.0	7.9	---	---	7.8	7.6
MONTH	7.7	7.3	8.3	7.4	8.0	7.4	8.0	7.5	8.3	7.5	7.9	7.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.9	7.7	7.6	7.4	---	---	7.5	7.3	7.3	7.2	7.2	7.1
2	7.9	7.6	7.7	7.4	---	---	7.5	7.3	7.4	7.2	7.3	7.1
3	7.9	7.7	7.7	7.5	---	---	7.3	7.3	7.4	7.2	7.4	7.3
4	7.9	7.8	7.6	7.3	---	---	7.4	7.3	7.4	7.2	7.4	7.2
5	8.0	7.8	7.5	7.3	---	---	7.4	7.3	---	---	7.4	7.3
6	7.9	7.8	7.5	7.4	---	---	7.4	7.0	---	---	7.4	7.3
7	7.9	7.8	7.5	7.3	7.5	7.4	7.1	7.0	---	---	7.5	7.4
8	8.0	7.9	7.4	7.1	7.5	7.4	7.2	7.0	---	---	7.5	7.2
9	8.0	7.9	7.5	7.3	7.5	7.4	7.2	7.1	---	---	7.5	7.1
10	8.0	7.8	7.5	7.4	7.4	7.3	7.3	7.2	---	---	7.5	7.3
11	7.9	7.7	7.5	7.3	7.5	7.3	7.3	7.2	---	---	7.5	7.4
12	7.9	7.7	7.4	7.3	7.4	7.3	7.4	7.2	---	---	7.5	7.2
13	7.9	7.5	7.4	7.3	7.4	7.3	7.3	7.3	---	---	7.5	7.3
14	7.9	7.8	7.4	7.3	7.4	7.3	7.3	7.2	---	---	7.6	7.4
15	7.9	7.7	7.4	7.3	7.4	7.3	7.3	7.2	---	---	7.4	7.3
16	7.8	7.7	7.5	7.3	7.4	7.3	7.3	7.2	---	---	7.3	7.2
17	7.7	7.7	7.8	7.3	7.3	7.3	7.3	7.2	---	---	7.4	7.2
18	7.8	7.7	---	---	7.5	7.2	7.3	7.3	---	---	7.3	7.1
19	7.9	7.7	---	---	7.3	7.2	7.3	7.2	7.7	7.6	7.5	7.0
20	7.7	7.6	7.4	7.3	7.3	7.2	7.3	7.1	7.8	7.7	7.5	7.3
21	7.8	7.6	7.4	7.2	7.3	7.2	7.3	7.2	7.7	7.5	7.4	7.3
22	7.8	7.6	7.2	7.1	7.4	7.3	7.4	7.3	7.6	7.5	7.4	7.0
23	7.8	7.6	7.2	7.2	7.4	7.3	7.5	7.3	7.6	7.5	7.5	7.1
24	7.8	7.7	7.3	7.1	7.4	7.3	7.5	7.3	7.6	7.5	7.4	7.2
25	7.9	7.8	7.3	7.1	7.4	7.3	7.4	7.3	7.6	7.5	7.3	7.0
26	7.9	7.7	7.3	7.2	7.4	7.2	7.4	7.3	7.6	7.4	7.5	7.0
27	7.9	7.7	---	---	7.4	7.3	7.4	7.3	7.5	7.3	7.3	6.9
28	7.9	7.8	---	---	7.4	7.3	7.4	7.3	7.4	7.1	7.4	7.2
29	7.8	7.7	---	---	7.4	7.3	7.4	7.3	7.4	7.3	7.3	7.2
30	7.8	7.5	---	---	7.4	7.2	7.4	7.2	7.4	7.1	7.3	7.0
31	---	---	---	---	---	---	7.3	7.2	7.4	7.3	---	---
MONTH	8.0	7.5	7.8	7.1	7.5	7.2	7.5	7.0	7.8	7.1	7.6	6.9
YEAR	8.3	6.9										

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21.5	20.0	13.0	12.0	9.5	8.0	5.5	5.5	6.0	5.5	4.0	3.5
2	22.5	21.0	13.0	12.5	8.5	8.0	5.5	5.0	7.5	6.0	4.5	4.0
3	22.5	21.5	14.0	13.0	8.5	8.0	6.0	5.5	8.0	7.5	5.0	5.0
4	23.5	22.5	14.5	14.0	9.0	8.5	6.5	6.0	8.0	8.0	6.5	5.5
5	23.5	22.5	14.5	13.5	9.5	9.0	8.0	6.5	8.0	7.5	6.5	6.0
6	23.5	22.5	14.0	13.5	9.5	9.0	8.5	7.5	7.5	7.0	6.5	6.0
7	23.5	22.5	14.0	13.5	9.5	7.5	8.0	7.5	7.0	6.5	7.0	6.5
8	22.5	21.5	14.0	13.0	7.0	6.0	8.5	7.5	7.5	7.0	6.5	6.0
9	22.0	17.5	13.0	12.0	7.0	7.0	8.0	7.5	7.5	7.0	8.5	6.5
10	17.5	16.0	12.5	11.5	7.0	6.5	7.5	7.0	9.0	7.5	10.5	9.0
11	18.5	16.0	13.0	12.5	8.5	7.0	7.0	6.5	9.0	8.5	12.0	10.5
12	19.5	18.5	13.0	12.5	8.5	8.0	7.0	6.0	8.5	6.5	12.0	11.0
13	20.5	19.5	12.5	12.5	8.5	7.5	6.5	6.0	7.0	5.0	11.5	10.0
14	20.0	19.5	13.0	12.5	8.0	7.5	6.5	6.5	5.5	5.0	10.5	9.5
15	20.5	20.0	13.0	11.0	8.5	8.0	8.0	6.5	5.5	4.5	11.0	10.0
16	21.0	20.5	11.5	11.0	9.5	8.5	8.0	7.0	5.5	4.5	11.5	11.0
17	21.0	20.5	11.5	11.0	10.0	9.5	7.0	5.5	5.5	4.5	11.0	10.5
18	20.5	19.5	11.5	11.0	10.5	10.0	5.5	5.5	6.0	5.0	10.5	5.5
19	19.5	19.5	13.0	11.5	11.0	10.5	6.0	5.0	6.5	5.5	7.5	5.5
20	19.5	19.0	13.5	13.0	11.0	10.0	6.5	6.0	7.5	6.5	7.5	6.5
21	19.0	17.0	13.5	12.5	9.5	7.0	7.0	6.5	7.5	6.5	8.0	6.5
22	17.0	16.0	12.5	11.5	7.0	6.5	7.0	6.5	7.5	6.0	8.5	6.0
23	17.5	16.5	11.5	11.0	6.5	6.5	7.0	6.5	7.5	4.5	7.0	6.0
24	17.5	15.5	11.0	11.0	7.0	6.0	7.5	6.5	4.0	3.5	7.0	6.0
25	15.5	14.5	11.5	11.0	6.0	6.0	8.0	7.5	3.5	3.0	7.0	6.5
26	15.5	15.0	12.0	11.0	6.0	6.0	8.5	8.0	4.0	3.5	8.0	7.0
27	15.5	15.0	13.0	11.5	6.0	5.5	8.5	8.0	4.5	4.0	9.0	8.0
28	15.0	15.0	13.0	13.0	6.5	6.0	8.0	6.5	4.5	3.5	10.5	9.5
29	15.5	15.0	13.0	12.0	6.5	6.0	6.5	5.5	---	---	13.0	10.5
30	15.5	15.5	11.5	9.5	6.5	5.5	5.5	5.0	---	---	14.5	13.0
31	16.0	13.0	---	---	6.0	5.5	5.5	5.0	---	---	15.0	14.0
MONTH	23.5	13.0	14.5	9.5	11.0	5.5	8.5	5.0	9.0	3.0	15.0	3.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.0	12.5	18.0	15.5	---	---	23.0	22.0	29.0	27.5	30.0	30.0
2	13.5	11.0	18.5	17.5	---	---	26.0	23.5	28.5	27.5	31.0	29.5
3	12.5	11.5	18.0	17.5	---	---	27.5	26.0	29.5	28.5	31.0	30.0
4	12.5	11.5	19.0	17.5	---	---	28.5	27.0	30.5	29.5	30.5	29.5
5	11.5	11.0	18.0	17.0	---	---	28.0	26.5	---	---	30.5	30.0
6	11.0	9.5	21.0	18.0	---	---	29.5	27.0	---	---	30.0	29.5
7	9.5	9.0	21.5	20.5	21.5	21.0	31.0	29.0	---	---	30.0	29.5
8	9.5	8.5	21.0	20.0	22.0	21.0	31.0	28.5	---	---	30.0	29.0
9	9.5	8.5	19.5	18.0	22.0	18.5	30.0	28.5	---	---	30.0	29.0
10	11.0	9.5	18.0	17.5	20.5	18.5	30.0	29.5	---	---	29.5	29.0
11	13.5	11.0	19.0	17.5	23.0	20.5	30.5	30.0	---	---	29.0	28.0
12	16.0	13.5	20.0	19.0	24.0	22.5	31.0	30.0	---	---	28.0	27.5
13	18.0	16.5	21.0	20.0	25.0	24.5	30.0	29.0	---	---	27.5	25.0
14	19.0	17.5	22.5	21.0	25.5	24.5	30.0	28.5	---	---	24.0	21.5
15	19.5	18.0	24.0	22.0	27.0	25.5	31.5	30.0	---	---	23.0	22.0
16	18.5	17.5	24.5	23.0	28.5	26.5	32.5	31.5	---	---	23.0	22.5
17	18.5	17.5	25.0	24.5	29.0	28.0	32.5	30.0	---	---	22.0	20.5
18	18.5	17.5	---	---	29.0	24.0	30.5	29.0	---	---	24.0	22.0
19	19.5	18.0	---	---	25.5	23.5	30.0	26.0	26.5	26.0	24.5	24.0
20	21.0	19.5	28.5	27.0	27.0	25.5	28.5	26.0	26.5	25.5	24.5	24.0
21	22.0	21.0	29.0	28.0	28.0	27.0	30.5	28.5	26.0	25.5	24.0	23.0
22	22.5	21.5	29.0	27.5	29.0	27.5	31.0	30.5	25.0	21.5	23.0	22.5
23	22.0	17.5	28.5	28.0	29.0	28.0	31.0	30.5	24.0	22.5	24.0	23.0
24	17.0	15.5	29.0	28.5	29.0	28.5	31.0	30.0	25.0	24.0	25.0	24.0
25	15.5	13.5	28.5	28.0	29.5	29.0	30.5	28.0	26.0	25.0	25.5	25.0
26	14.0	13.5	28.0	27.5	30.0	29.0	28.0	26.5	26.0	25.0	25.5	25.0
27	16.0	14.5	---	---	30.0	28.5	28.0	26.5	28.0	25.5	25.5	24.5
28	17.0	15.5	---	---	30.5	29.5	28.5	27.0	29.0	27.0	25.0	24.5
29	16.0	14.5	---	---	30.0	24.5	29.0	26.5	30.0	29.0	25.0	24.5
30	17.0	14.5	---	---	26.5	23.0	26.5	25.0	30.0	29.0	24.5	24.5
31	---	---	---	---	---	---	28.0	25.5	30.0	29.0	---	---
MONTH	22.5	8.5	29.0	15.5	30.5	18.5	32.5	22.0	30.5	21.5	31.0	20.5
YEAR	32.5	3.0										

04208506 CUYAHOGA RIVER AT WEST THIRD STREET BRIDGE, IN CLEVELAND, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	4.9	4.6	7.2	6.8	8.7	7.7	9.8	9.6	---	---	12.1	11.9
2	4.7	3.5	7.3	7.1	8.8	8.4	9.9	9.7	9.8	9.6	12.0	11.6
3	4.4	3.8	7.4	6.7	8.5	8.2	10.1	9.5	9.6	9.2	11.6	11.3
4	3.9	3.4	6.7	5.7	8.5	8.1	10.0	9.7	9.1	8.4	11.5	10.4
5	4.2	3.3	6.7	5.8	8.1	7.7	9.7	9.2	8.7	8.1	10.9	10.2
6	3.7	3.0	6.8	6.6	8.7	7.4	9.2	8.8	8.9	8.2	11.2	10.8
7	3.0	2.2	6.8	6.5	9.0	6.2	9.4	9.2	8.7	8.3	11.2	10.8
8	3.0	1.8	7.0	6.6	8.8	6.8	9.4	9.2	8.8	8.4	11.1	10.9
9	3.9	2.5	7.5	6.7	9.3	8.2	9.3	9.1	8.9	8.5	11.0	10.5
10	5.5	3.4	7.7	7.2	9.9	9.5	9.4	9.3	8.6	7.8	10.5	9.6
11	5.4	4.7	7.5	6.9	9.8	9.1	9.3	9.0	8.1	7.6	9.9	9.1
12	5.0	4.4	7.2	6.7	9.5	9.0	10.2	9.1	8.8	7.2	9.7	7.2
13	4.5	3.9	7.5	7.0	9.4	9.2	10.3	10.0	9.4	8.0	9.5	7.3
14	4.6	3.8	7.6	7.3	9.3	9.0	10.2	10.1	10.3	9.2	10.2	9.5
15	4.1	3.6	8.0	7.2	9.2	9.0	10.1	9.3	10.3	10.1	10.3	10.1
16	3.9	3.0	8.2	7.9	9.1	8.9	9.5	8.1	10.1	9.4	10.0	9.6
17	3.5	2.9	8.0	7.7	9.0	8.6	8.3	7.5	10.4	9.5	10.0	9.6
18	4.2	3.4	7.8	7.4	8.5	8.1	9.0	7.9	10.5	10.1	11.4	9.8
19	4.3	3.9	7.4	6.9	8.1	7.9	9.5	8.3	10.3	9.6	11.2	11.0
20	4.2	3.4	6.9	6.5	8.1	7.6	9.0	8.3	9.8	9.4	11.2	11.0
21	4.7	2.2	6.8	6.4	8.9	6.2	9.0	8.9	9.8	9.4	11.4	11.0
22	4.5	2.1	7.1	6.8	9.1	8.8	9.0	8.7	9.9	9.6	11.1	10.7
23	4.7	4.3	7.6	6.9	9.6	9.1	8.7	8.2	9.9	8.6	11.5	11.1
24	6.4	4.3	7.6	7.2	9.7	9.5	9.0	8.6	10.7	9.4	11.6	11.2
25	6.3	4.7	7.6	7.2	9.8	9.6	9.1	8.8	11.0	10.6	11.5	11.3
26	6.1	5.6	7.5	7.3	9.8	9.6	---	---	11.3	11.0	11.3	10.8
27	6.2	5.7	7.6	5.9	9.8	9.5	---	---	11.1	11.0	11.0	10.4
28	6.5	5.3	6.9	6.2	9.8	9.6	---	---	12.1	11.0	10.6	8.1
29	6.2	5.6	7.0	6.5	9.8	9.6	---	---	---	---	9.4	8.9
30	6.5	5.7	7.8	7.1	9.8	9.4	---	---	---	---	8.9	8.6
31	6.8	6.2	---	---	9.7	9.5	---	---	---	---	9.0	8.2
MONTH	6.8	1.8	8.2	5.7	9.9	6.2	10.3	7.5	12.1	7.2	12.1	7.2

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.3	8.8	5.7	3.9	---	---	2.1	0.9	1.3	0.6	0.4	0.1
2	9.5	8.4	5.0	3.1	---	---	1.7	0.2	0.5	0.2	0.4	0.1
3	9.7	8.9	4.8	2.8	---	---	0.5	0.2	0.4	0.2	0.3	0.1
4	9.8	9.4	4.9	1.9	---	---	0.3	0.1	0.4	.0	0.5	0.1
5	9.7	9.3	4.7	1.8	---	---	0.6	0.1	---	---	0.4	0.1
6	10.3	9.4	4.4	2.4	---	---	0.6	0.1	---	---	0.9	0.1
7	10.6	10.0	4.0	1.9	0.3	0.1	0.2	0.1	---	---	0.6	0.1
8	10.7	10.2	2.8	1.1	0.4	0.1	0.4	0.1	---	---	0.7	.0
9	10.7	10.4	3.8	1.9	0.3	0.1	0.7	0.1	---	---	0.6	0.1
10	10.6	9.8	4.4	2.2	0.8	0.1	0.5	0.1	---	---	0.3	0.1
11	9.8	8.4	2.8	0.2	0.8	0.1	0.3	.0	---	---	0.4	0.1
12	8.8	7.9	1.3	0.1	0.3	0.1	0.6	0.1	---	---	0.5	0.1
13	7.8	6.9	1.1	0.4	0.2	0.1	0.7	0.1	---	---	0.4	0.1
14	7.3	6.2	1.0	0.2	0.3	0.1	0.3	0.1	---	---	1.2	0.1
15	6.6	5.2	0.5	0.1	0.3	0.1	0.2	0.1	---	---	2.8	1.1
16	6.1	4.3	0.2	0.1	0.2	0.1	0.4	0.1	---	---	3.6	2.1
17	5.6	4.3	0.2	0.1	0.1	0.1	0.6	0.1	---	---	4.7	1.9
18	6.0	5.0	---	---	0.2	0.1	1.1	0.4	---	---	4.2	3.5
19	6.2	4.1	---	---	0.2	0.1	1.6	0.4	---	---	3.9	1.4
20	4.6	3.6	0.4	0.1	0.3	0.1	2.4	0.7	---	---	3.4	2.0
21	3.8	2.6	0.8	0.1	0.5	0.1	2.7	0.2	---	---	2.5	1.5
22	---	---	0.6	0.1	0.4	0.1	1.2	0.2	---	---	2.4	2.0
23	5.5	1.4	0.1	0.1	0.2	0.1	1.5	0.7	---	---	2.2	1.5
24	7.3	4.8	0.2	0.1	0.1	0.1	2.0	0.8	4.1	3.3	---	---
25	8.2	6.5	0.5	0.1	0.1	0.1	1.8	0.6	3.7	2.4	---	---
26	8.2	7.1	0.8	0.1	0.3	0.1	2.1	0.8	3.2	2.3	---	---
27	7.7	5.3	---	---	0.2	0.1	3.2	1.8	2.8	2.1	---	---
28	6.6	5.1	---	---	0.2	0.1	2.0	0.9	2.0	0.5	---	---
29	7.0	5.4	---	---	0.5	0.1	2.6	0.4	0.8	0.3	---	---
30	7.1	4.7	---	---	0.9	0.3	2.7	0.2	1.1	0.1	---	---
31	---	---	---	---	---	---	2.4	0.2	0.4	0.1	---	---
MONTH	10.7	1.4	5.7	0.1	0.9	0.1	3.2	.0	4.1	.0	4.7	.0
YEAR	12.1	.0										

04208690 EUCLID CREEK NEAR EUCLID, OH

LOCATION.--Lat 41°34'28", long 81°32'51", Cuyahoga County, Hydrologic Unit 04110003, on right bank 150 ft (46 m) upstream from St. Clair Avenue bridge, 0.3 mi (0.5 km) downstream from city of Cleveland waterworks, 1.6 mi (2.6 km) upstream from mouth.

DRAINAGE AREA.--22.6 mi² (58.5 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to September 1977.

GAGE.--Water-stage recorder. Datum of gage is 600.262 ft (184.236 m) above mean sea level, city of Cleveland bench mark.

REMARKS.--Records poor. Diurnal fluctuations caused by waterplant upstream from gage.

EXTREMES FOR PERIOD May to September 1977.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 18	0530	*2680	75.9	*7.61	2.320	Aug. 11	2200	1640	46.4	5.47	1.667
July 12	2300	2080	58.9	6.42	1.957						

Minimum discharge, 3.1 ft³/s (0.088 m³/s) July 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, MAY TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								22	20	95	54	21
2								120	12	9.5	23	27
3								55	12	7.4	18	20
4								140	13	5.1	18	19
5								100	21	6.5	27	17
6								50	83	5.6	93	18
7								40	46	25	41	18
8								34	22	14	166	18
9								32	68	5.4	37	21
10								30	24	5.4	160	20
11								30	18	5.6	201	17
12								32	13	184	258	18
13								28	15	162	51	76
14								26	13	16	72	103
15								24	12	13	27	35
16								19	14	13	23	114
17								20	12	27	48	132
18								18	441	12	23	40
19								21	36	118	20	79
20								18	27	20	21	61
21								22	24	13	41	57
22								20	17	12	37	32
23								79	11	11	21	27
24								62	11	11	21	24
25								22	16	19	18	23
26								16	11	12	17	30
27								14	9.2	11	20	23
28								12	9.5	12	17	25
29								11	39	175	21	25
30								11	87	72	19	22
31								13	---	20	20	---
TOTAL								1141	1156.7	1117.5	1633	1162
MEAN								36.8	38.6	36.0	52.7	38.7
MAX								140	441	184	258	132
MIN								11	9.2	5.1	17	17
CFSM								1.63	1.71	1.59	2.33	1.71
IN.								1.88	1.90	1.84	2.69	1.91

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04208690 EUCLID CREEK NEAR EUCLID, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May to September 1977.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: July to September 1977.

WATER QUALITY DATA, MAY TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
JUL 27...	1515	7.0	560	7.2	21.0	8.5	94	.2	160	74	47	11

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
JUL 27...	32	3.0	108	0	89	11	61	59	.7	4.0	271	.35

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
JUL 27...	.00	.07	.12	2	<10	17	30	0	30	.0	50	5.3

SUSPENDED-SEDIMENT, MAY TO SEPTEMBER 1977

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1							---	---	84	12	14	0.79
2							---	---	50	3.1	33	2.4
3							---	---	28	1.4	23	1.2
4							---	---	14	0.68	24	1.2
5							---	---	11	0.80	25	1.1
6							---	---	155	50	30	1.5
7							---	---	22	2.4	35	1.7
8							---	---	174	217	38	1.8
9							---	---	30	3.0	30	1.7
10							---	---	177	175	16	0.86
11							---	---	219	652	7	0.32
12							---	---	252	176	4	0.19
13							---	---	90	12	65	13
14							---	---	98	19	110	31
15							---	---	25	1.8	16	1.5
16							---	---	18	1.1	75	23
17							---	---	68	8.8	126	83
18							---	---	25	1.6	12	1.3
19							---	---	23	1.2	171	66
20							---	---	15	0.85	35	5.8
21							---	---	38	4.2	6	0.92
22							---	---	15	1.5	10	0.86
23							---	---	14	0.79	9	0.66
24							---	---	15	0.85	8	0.52
25							---	---	9	0.44	9	0.56
26							---	---	5	0.23	9	0.73
27							---	---	5	0.27	8	0.50
28							19	0.62	5	0.23	9	0.61
29							309	552	31	1.8	9	0.61
30							117	66	86	4.4	10	0.59
31							14	0.76	90	4.9	---	---
TOTAL							---	---	---	1359.34	---	245.92

04209000 CHAGRIN RIVER AT WILLOUGHBY, OH

LOCATION.--Lat 41°37'59", long 81°24'13", in T.9 N., R.10 W., Lake County, Hydrologic Unit 04110003, on left bank, 150 ft (46 m) downstream from city waterworks dam, 800 ft (244 m) downstream from East Branch, 1.0 mi (1.6 km) southeast of Willoughby, and 5.0 mi (8.0 km) upstream from mouth.

DRAINAGE AREA.--246 mi² (637 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1925 to November 1935, October 1939 to current year (July 1925 to September 1932 monthly run-off in inches, adjusted for diversion, published in WSP 1307; previously published run-off was unadjusted and should not be used).

REVISED RECORDS.--WSP 1084: 1929(M), 1931(M). WSP 1307: 1926-28(M), 1930(M), 1932-35(M), 1942(M). WSP 1912: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 594.57 ft (181.225 m) above mean sea level. Prior to Dec. 20, 1939, nonrecording gage at site 150 ft (46 m) upstream at datum 7 ft (2 m) higher.

REMARKS.--Records good except those for winter periods, which are fair. Water diverted 200 ft (61 m) upstream from station for municipal supply of city of Willoughby.

AVERAGE DISCHARGE.--48 years, 325 ft³/s (9.204 m³/s), 17.95 in/yr (456 mm/yr), adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft³/s (793 m³/s) Mar. 22, 1948, gage height, 17.95 ft (5.471 m) (from high-water mark in well), from rating curve extended above 14,000 ft³/s (393 m³/s) on basis of contracted-opening measurements of peak flow; minimum daily, 3.0 ft³/s (0.085 m³/s) July 25, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 10.3 ft (3.14 m), from floodmark, former site and datum, discharge, 24,500 ft³/s (694 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (113 m³/s) and maximums (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft³/s)	(m³/s)	(ft)	(m)			(ft³/s)	(m³/s)	(ft)	(m)
Feb. 24	1600	*7940	225	10.49	3.197	Mar. 18	1630	5120	145	8.38	2.554
Feb. 24	2100	--	--	*a12.27	3.740	Aug. 11	2230	6580	186	9.52	2.902
Mar. 13	0330	4060	115	7.42	2.262						

Minimum daily discharge, 70 ft³/s (1.98 m³/s) May 30, June 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	187	342	110	130	90	500	330	236	196	896	172	100
2	175	218	100	130	90	395	1040	246	97	230	127	120
3	168	182	90	130	90	405	2010	497	77	137	102	100
4	161	157	85	130	90	974	752	403	70	111	88	100
5	150	146	85	130	90	1050	1070	601	71	105	97	102
6	147	147	150	130	90	608	770	379	266	100	290	100
7	147	149	300	130	90	455	704	268	157	97	415	100
8	140	146	434	130	90	370	764	211	100	200	782	102
9	223	181	304	130	90	375	400	182	305	137	390	102
10	350	170	253	130	110	380	375	166	194	100	1240	102
11	203	215	433	150	220	320	310	153	108	85	1540	108
12	168	208	250	150	900	518	257	143	88	194	1970	108
13	157	182	180	150	800	2530	226	139	85	878	722	161
14	154	180	150	140	500	902	202	139	75	186	758	560
15	147	165	150	120	400	590	182	127	78	111	365	235
16	143	146	129	110	350	420	164	125	73	97	239	476
17	150	143	134	100	300	325	161	115	70	198	320	914
18	143	135	125	100	250	3370	161	112	842	154	210	488
19	143	138	119	95	220	1820	164	112	295	305	182	385
20	161	130	528	95	210	1430	161	109	133	355	168	404
21	277	124	360	95	200	1120	245	101	105	147	198	385
22	192	133	300	95	900	1490	263	92	85	108	590	295
23	193	122	250	95	2000	1170	561	103	82	91	248	248
24	451	110	220	95	4500	902	635	149	78	78	190	210
25	682	110	190	95	3030	536	652	105	88	102	133	190
26	344	153	180	95	1480	380	698	86	85	117	111	285
27	254	233	160	95	1350	330	524	76	85	88	102	248
28	202	148	150	95	986	1170	415	72	91	78	102	198
29	157	140	140	95	---	1190	345	71	194	202	100	186
30	145	120	140	95	---	632	270	70	202	548	133	179
31	319	---	130	95	---	425	---	84	---	154	108	---
TOTAL	6633	4863	6334	3555	19316	27232	14951	5522	4476	6569	12192	7361
MEAN	214	162	204	115	690	878	498	178	149	212	393	245
MAX	682	342	528	150	4500	3370	2010	601	842	896	1970	914
MIN	140	110	85	95	90	320	161	70	70	78	88	100
MEAN*	217	165	207	118	693	881	501	182	152	215	397	249
CFSM*	0.88	0.67	0.84	0.48	2.82	3.58	2.04	0.74	0.62	0.87	1.61	1.01
IN.*	1.01	0.75	0.97	0.55	2.94	4.13	2.27	0.85	0.69	1.01	1.86	1.13

CAL YR 1976 TOTAL 137644 MEAN 376 MAX 7630 MIN 52 MEAN* 379 CFSM* 1.54 IN.* 20.98
WTR YR 1977 TOTAL 119006 MEAN 326 MAX 4500 MIN 70 MEAN* 329 CFSM* 1.34 IN.* 18.17

* Adjusted for municipal supply diversion of city of Willoughby.
a Ice jam.

04209000 CHAGRIN RIVER AT WILLOUGHBY, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND 5 DAY (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)
MAR 15...	1100	613	420	8.1	9.5	11.2	97	1.8	130	62	38	8.2
JUL 27...	1300	88	565	8.1	21.0	9.8	110	.8	200	58	57	13

DATE	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 15...	31	3.2	88	0	69	1.1	48	53	.1	6.8	231	.79
JUL 27...	26	3.0	164	0	138	2.1	57	38	.1	9.4	262	.18

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 15...	.02	.11	.10	4	20	14	90	10	30	.0	70	3.6
JUL 27...	.01	.03	.09	1	<10	6	30	8	10	.0	30	8.4

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM
FEB 24...	1730	9930	3260	87400	20	30	40
MAR 18...	0900	3900	2260	23800	23	30	43
JUL 13...	0800	858	814	1890	44	58	78

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM	SUS. SED. SIEVE DIAM. % FINER THAN .125 MM	SUS. SED. SIEVE DIAM. % FINER THAN .250 MM	SUS. SED. SIEVE DIAM. % FINER THAN .500 MM	SUS. SED. SIEVE DIAM. % FINER THAN 1.00 MM
FEB 24...	51	69	78	82	92	100	--
MAR 18...	57	76	87	87	93	99	100
JUL 13...	89	96	99	100	--	--	--

04209000 CHAGRIN RIVER AT WILLOUGHBY, OH--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1			---	---	4	1.2			---	---	70	112
2			---	---	4	1.1			---	---	41	44
3			---	---	4	0.97			---	---	33	36
4			---	---	6	1.4			---	---	208	645
5			---	---	6	1.4			---	---	185	524
6			---	---	8	3.2			---	---	70	115
7			---	---	---	---			---	---	37	45
8			---	---	10	12			---	---	28	26
9			---	---	10	8.2			---	---	27	27
10			---	---	10	6.8			---	---	37	38
11			---	---	---	---			---	---	37	32
12			---	---	---	---			---	---	---	---
13			---	---	---	---			---	---	---	---
14			---	---	---	---			---	---	230	597
15			---	---	4	1.6			---	---	132	210
16			---	---	5	1.7			---	---	60	68
17			---	---	5	1.8			2	1.6	36	32
18			5	1.8	5	1.7			2	1.4	1130	11600
19			5	1.9	5	1.6			2	1.2	---	---
20			5	1.8	---	---			2	1.1	---	---
21			5	1.7	---	---			2	1.1	---	---
22			5	1.8	---	---			2	2.7	217	1070
23			5	1.6	7	4.7			2	11	138	436
24			4	1.2	7	4.2			1740	33100	74	180
25			4	1.2	5	2.6			1110	12200	45	65
26			6	2.5	5	2.4			290	1160	36	37
27			6	3.8	5	2.2			163	594	33	29
28			6	3.0	5	2.0			113	301	225	829
29			6	2.3	5	1.9			---	---	202	649
30			6	1.9	3	1.1			---	---	73	125
31			---	---	3	1.1			---	---	27	31
TOTAL			---	---	---	---			---	---	---	---

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16	14	12	7.6	115	61	22	53	54	25	30	8.1
2	---	---	11	8.8	36	9.4	20	12	45	15	30	9.7
3	---	---	10	13	28	5.8	20	7.4	44	12	26	7.0
4	---	---	19	21	23	4.3	20	6.0	42	10	19	5.1
5	---	---	70	114	20	3.8	21	6.0	40	10	15	4.1
6	---	---	43	44	264	233	28	7.6	40	31	12	3.2
7	---	---	33	24	68	29	30	7.9	---	---	10	2.7
8	---	---	23	13	32	8.6	628	539	---	---	10	2.8
9	---	---	15	7.4	---	---	---	---	165	174	10	2.8
10	---	---	10	4.5	---	---	---	---	858	4750	10	2.8
11	---	---	4	1.7	---	---	17	3.9	---	---	10	2.9
12	13	9.0	4	1.5	---	---	---	---	---	---	10	2.9
13	16	9.8	4	1.5	19	4.4	---	---	150	292	22	9.6
14	16	8.7	5	1.9	20	4.2	125	63	120	246	289	437
15	15	7.4	7	2.4	23	4.8	52	16	100	99	85	54
16	15	6.6	9	3.0	27	5.3	59	15	85	55	192	310
17	15	6.5	10	3.1	28	5.3	58	31	365	294	512	1310
18	12	5.2	10	3.0	---	---	58	24	---	---	210	277
19	8	3.5	10	3.0	---	---	121	130	---	---	129	134
20	9	3.9	10	2.9	47	17	110	105	---	---	285	380
21	19	15	10	2.7	32	9.1	75	30	---	---	50	49
22	---	---	10	2.5	24	5.5	37	11	---	---	43	34
23	---	---	22	6.1	23	5.0	29	7.1	47	31	38	25
24	---	---	59	24	22	4.6	28	5.9	69	35	33	19
25	---	---	7	2.0	20	4.8	25	6.9	40	14	32	16
26	78	147	10	2.3	18	4.1	25	7.9	12	3.6	90	69
27	28	40	10	2.1	17	3.9	27	6.4	9	2.5	42	28
28	15	17	10	1.9	15	3.7	23	4.8	10	2.8	25	13
29	15	14	10	1.9	58	30	---	---	14	3.8	20	10
30	13	9.5	10	1.9	35	19	---	---	24	8.6	17	8.2
31	---	---	17	3.9	---	---	---	---	32	9.3	---	---
TOTAL	---	---	---	332.6	---	---	---	---	---	---	---	3236.9

04212100 GRAND RIVER NEAR PAINESVILLE, OH

LOCATION.--Lat 41°43'08", long 81°13'41", Lake County, Hydrologic Unit 04110004, on downstream left abutment of bridge on State Highway 84 (Walnut Avenue), 0.9 mi (1.4 km) downstream from Big Creek in Painesville.

DRAINAGE AREA.--685 mi² (1,774 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 620.37 ft (189.089 m) above mean sea level.

REMARKS.--Records good except those for winter periods, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s (445 m³/s) Feb. 17, 1976, gage height, 12.55 ft (3.825 m); minimum, 24 ft³/s (0.68 m³/s) Sept. 9, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 6,500 ft³/s (184 m³/s) and maximums (*):

		Discharge		Gage height				Discharge		Gage height	
Date	Time	(ft³/s)	(m³/s)	(ft)	(m)	Date	Time	(ft³/s)	(m³/s)	(ft)	(m)
Feb. 25	0730	e11700	331	*10.52	3.206	Apr. 23	2200	9460	268	9.35	2.850
Mar. 19	2000	6520	185	7.72	2.353	Aug. 12	0200	10700	303	10.01	3.051

Minimum discharge, 29 ft³/s (0.82 m³/s) June 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	560	1010	400	140	100	5230	1120	596	78	173	278	59
2	364	1230	350	130	100	3670	1310	455	52	91	144	57
3	252	967	300	130	100	2560	3100	410	50	76	87	64
4	191	726	270	130	100	2980	3860	373	43	89	76	266
5	149	538	250	120	100	4130	3110	614	36	78	60	191
6	123	420	350	120	100	2960	2850	746	165	55	210	113
7	107	387	436	120	100	1970	2510	795	101	378	319	92
8	96	376	719	110	100	1450	2780	634	79	2300	704	81
9	132	354	1100	110	170	1220	2700	420	130	1660	974	57
10	711	335	1060	110	250	1100	2280	278	119	662	1740	44
11	982	365	1210	110	500	906	1520	203	92	294	2350	38
12	711	431	1280	110	900	804	922	165	89	167	5280	38
13	475	489	1110	110	700	3930	637	149	86	139	3630	49
14	328	525	924	110	550	4410	490	147	69	98	1670	386
15	242	524	774	110	450	2840	391	142	54	79	878	554
16	188	469	729	100	350	2220	314	126	45	98	542	753
17	170	426	473	100	300	1870	256	117	44	130	475	1310
18	176	356	313	100	260	4060	219	115	218	105	310	1710
19	154	318	320	100	240	5940	205	121	123	259	242	1530
20	144	308	989	100	230	5450	208	109	75	739	179	2210
21	328	290	1500	100	250	4690	257	103	60	1730	142	2480
22	450	269	1000	100	500	5540	214	94	49	634	1140	1540
23	934	255	600	100	1800	4750	2690	78	42	252	1210	846
24	1650	263	450	100	5200	4050	5710	84	40	132	942	536
25	2640	232	350	100	10000	2710	3580	61	41	242	590	445
26	2130	340	270	100	9820	1820	2650	54	40	450	346	1090
27	1330	915	220	100	7470	1280	3010	48	34	440	203	2240
28	865	999	180	100	6700	2330	2210	68	30	194	132	1180
29	604	743	160	100	---	3360	1380	66	45	119	98	527
30	432	564	150	100	---	2330	894	55	43	355	79	319
31	514	---	140	100	---	1550	---	55	---	282	65	---
TOTAL	13132	15424	18377	3370	47440	94110	53377	7481	2172	12500	25095	20805
MEAN	585	514	593	109	1694	3036	1779	241	72.4	403	810	694
MAX	2640	1230	1500	140	10000	5940	5710	795	218	2300	5280	2480
MIN	96	232	140	100	100	804	205	48	30	55	60	38
CFSM	.85	.75	.87	.16	2.47	4.43	2.60	.35	.11	.59	1.18	1.01
IN.	.98	.84	1.00	.18	2.58	5.11	2.90	.41	.12	.66	1.36	1.13

CAL YR 1976 TOTAL 355340 MEAN 971 MAX 13400 MIN 25 CFSM 1.42 IN 19.30
WTR YR 1977 TOTAL 318283 MEAN 872 MAX 10000 MIN 30 CFSM 1.27 IN 17.28

04212200 GRAND RIVER AT PAINESVILLE, OH

LOCATION.--Lat 41°44'09", long 81°15'59", in T.11 N., R.8 W., Lake County, Hydrologic Unit 04110004, at bridge on State Highway 535 in Painesville, 2.2 mi (3.5 km) upstream from mouth, and 8.0 mi (12.9 km) downstream from Kellogg Creek.

DRAINAGE AREA.--701 mi² (1,816 km²).

PERIOD OF RECORD.--Water years 1950 to 1952, 1962 to current year.

PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: December 1966 to current year.
pH: December 1966 to current year.
WATER TEMPERATURES: March 1950 to February 1952, October 1962 to current year.
DISSOLVED OXYGEN: December 1966to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. See records of daily discharge for station near Painesville (station 04212100).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 30,300 micromhos July 14, 1964; minimum, 300 micromhos Feb. 23, 28, Mar. 1, 1971, Aug. 12, 1977.
pH: Maximum, 12.0 units Nov. 9, 1971, Jan. 18, 1975; minimum, 4.5 units Sept. 28, 1972.
WATER TEMPERATURES: Maximum, 33.5°C June 28, 1971; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher Dec. 2, 3, 23, 1971, Mar. 11, 1972; minimum, 0.0 mg/L on several days in 1968 and 1977.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 12,000 micromhos Oct. 9; minimum, 300 micromhos Aug. 12.
pH: Maximum, 11.8 units Dec. 18; minimum, 6.7 units Feb. 8, June 17, Sept. 18.
WATER TEMPERATURES: Maximum, 31.0°C July 7; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 13.5 mg/L Mar. 6, 8; minimum, 0.0 mg/L Sept. 1, 2.

REVISIONS.--Under REMARKS Water Resources Data For Ohio, Water Year 1976 the daily discharge station number is corrected to read 04212100.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 15...	1500	2540	450	7.5	9.5	10.8	94	3.9	110	81	37	5.2
JUN 28...	1315	29	5700	7.5	26.0	4.5	54	2.7	840	740	320	10

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 15...	27	3.4	40	0	33	2.0	36	80	.1	4.8	213	.59
JUN 28...	230	3.9	120	0	98	6.1	37	800	.1	1.4	1460	.28

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 15...	.02	.13	.13	4	10	16	80	13	30	.0	90	2.9
JUN 28...	.03	.95	.08	5	10	40	0	11	100	.0	40	9.5

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	4530	3270	2130	1440	3210	2400	2310	1800	2610	2520	510	450
2	5610	4200	2070	1620	3810	2760	2040	1830	2820	2520	600	510
3	6570	5430	2700	1650	6480	3360	2250	1740	2640	2550	720	600
4	7800	6630	3150	2730	8670	5640	2160	1800	2700	2610	750	510
5	8400	7260	4140	2940	7740	5880	2550	1920	2760	2670	510	450
6	8700	8100	4740	3810	7740	6210	2850	2070	2640	2520	630	510
7	11300	8310	5010	4110	7080	5010	2520	2250	2550	2460	750	630
8	11700	10800	4620	3720	5310	2970	2580	2280	2520	2400	870	750
9	12000	8490	4650	3360	2880	2580	2520	2310	2550	2430	870	840
10	8070	4290	5820	3810	2760	2520	2700	2220	2550	2370	930	810
11	3180	2010	6120	4710	2520	1830	2730	2310	2850	2550	1050	930
12	4380	2880	5490	4560	2070	1590	2730	2400	2850	2670	1200	1050
13	5460	3840	4740	4140	2580	1680	2760	2370	2760	1350	1020	450
14	6120	4800	4770	3840	3000	2550	3450	2460	1350	1080	480	450
15	7680	5010	4260	3180	3480	2640	3450	3030	1080	960	540	450
16	7200	5490	4500	3810	4520	3210	3060	2970	990	900	570	540
17	6900	5520	4500	3840	6330	3450	3060	2760	930	900	630	540
18	7410	5220	5550	3930	7440	2700	2880	2610	930	900	720	420
19	7980	7230	5730	4680	3960	3120	3120	2540	960	900	480	420
20	9420	7590	5910	4830	3330	840	3060	2610	990	930	480	420
21	10400	5610	6210	4950	1110	780	2730	2550	1140	990	510	420
22	5700	3540	6120	4440	1020	840	2700	2610	1200	1140	480	420
23	3570	2490	4950	4050	1260	1020	2880	2640	1260	900	510	450
24	2670	1470	5640	3990	1230	1200	2880	2760	840	420	540	480
25	1500	1200	7140	4950	1980	1500	2940	2790	480	360	660	540
26	1620	1260	6960	4530	2070	1620	3270	2910	450	390	870	630
27	1950	1560	4260	2130	2490	1470	3420	2620	480	420	960	810
28	2640	2100	2340	2070	1770	1350	3660	2760	480	420	960	480
29	3420	2310	3030	2250	1800	1380	3450	2490	---	---	540	480
30	4470	3030	2940	2310	1980	1560	2610	2460	---	---	630	540
31	4620	2010	---	---	2610	1890	2640	2550	---	---	720	600
MONTH	12000	1200	7140	1440	8670	780	3660	1740	2850	360	1200	420

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	900	720	1200	1020	6660	4830	7080	3630	2310	1350	4440	3480
2	990	630	1470	1170	6150	3570	4890	2670	1950	1350	5610	4500
3	630	480	1530	1320	3810	3570	3150	2700	2580	1980	6420	5700
4	540	420	1680	1440	3930	3810	4650	3180	4650	2580	5760	2040
5	510	450	1500	1050	4590	3960	4680	4110	4620	3900	2340	1860
6	540	480	1050	930	6120	3240	4710	3900	4530	2400	2850	2160
7	600	510	990	900	2970	1950	5460	1350	2070	1230	3570	2820
8	570	540	1140	1020	2550	2280	1260	690	1770	540	3810	3540
9	570	510	1470	1140	3120	2550	900	720	780	540	3870	3420
10	600	510	1680	1470	2790	1890	1320	930	840	390	5430	3840
11	750	600	1800	1620	2490	2010	1800	1320	540	360	6060	4230
12	990	750	2940	1860	2970	2520	2340	1800	450	300	---	---
13	1170	990	3540	2760	3300	2730	2670	2220	420	360	---	---
14	1380	1140	4260	3330	2970	2670	2820	2490	720	420	---	---
15	1530	1350	3690	2760	3300	2910	3690	2850	1020	660	1380	1140
16	1650	1470	3000	2790	3450	3270	4200	3630	1260	990	1260	1080
17	1800	1620	---	---	4380	3390	3780	3060	1350	1080	1050	750
18	2430	1770	---	---	5490	1860	3030	2700	1650	1200	750	690
19	2250	1980	---	---	1800	1500	3510	1800	1860	1620	840	720
20	2220	330	---	---	2490	1830	1590	600	2010	1770	720	660
21	2490	1680	---	---	3900	2580	630	450	2550	1950	660	630
22	2190	1950	---	---	3930	3630	1140	630	3390	480	900	660
23	2130	390	4920	4530	3930	3570	1650	1140	690	570	1200	900
24	450	390	4950	4650	3930	3180	2040	1680	810	630	1440	1230
25	510	420	4830	4170	5040	3600	3330	1650	1020	810	1530	1380
26	570	510	4410	4170	7590	5310	1590	1080	1410	1020	1530	630
27	540	480	5520	4410	7590	4260	1230	990	1770	1410	660	570
28	630	327	6360	5310	6690	3840	1740	1260	2190	1770	990	630
29	840	660	7320	6150	6270	4440	2310	1740	2880	2250	1410	1020
30	1020	840	7110	4200	7560	6630	3000	1530	3570	2940	1830	1410
31	---	---	5040	4200	---	---	1710	1260	3510	3330	---	---
MONTH	2490	327	7320	900	7590	1500	7080	450	4650	300	6420	570
YEAR	12000	300										

04212200 GRAND RIVER AT PAINESVILLE, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.9	7.9	8.5	7.7	8.3	7.9	8.2	8.0	7.2	7.1	7.3	7.1
2	8.2	7.9	8.6	7.7	8.2	7.8	8.2	7.9	7.2	7.1	7.4	7.2
3	8.3	7.8	8.4	7.8	8.0	7.6	8.8	7.8	7.3	7.2	7.6	7.3
4	7.9	7.5	8.2	7.9	8.1	7.9	8.0	7.7	7.2	7.1	7.8	7.6
5	7.8	7.5	8.2	8.0	8.1	7.9	7.7	7.5	7.2	7.1	7.6	7.4
6	7.8	7.6	8.4	8.0	8.2	8.0	7.7	7.5	7.1	6.9	7.6	7.4
7	7.8	7.6	8.4	8.1	8.3	8.1	8.0	7.6	7.0	6.8	7.8	7.6
8	7.9	7.6	8.4	8.1	8.7	7.7	7.8	7.4	7.0	6.7	8.0	7.7
9	8.4	7.7	8.2	8.0	8.7	7.8	7.6	7.4	7.2	7.0	7.9	7.7
10	8.5	7.9	8.3	7.8	8.0	7.8	7.5	7.3	7.2	7.0	8.1	7.8
11	8.6	7.4	8.2	7.9	8.0	7.5	7.5	7.0	7.2	7.1	8.0	7.8
12	8.6	7.9	8.5	8.2	8.0	7.7	7.4	7.0	7.2	7.0	8.1	7.9
13	8.5	7.9	8.4	8.1	8.0	7.8	7.4	6.8	7.2	7.2	8.2	7.6
14	8.7	7.9	8.4	8.1	8.3	7.9	7.7	7.1	7.2	7.0	7.6	7.5
15	8.2	7.8	8.5	8.2	8.8	7.8	7.8	7.2	7.2	6.9	7.7	7.5
16	8.2	7.7	8.4	8.0	8.3	7.9	7.5	7.2	7.3	7.1	7.8	7.7
17	8.0	7.8	8.4	8.0	9.8	7.9	7.4	7.1	7.2	7.1	7.8	7.6
18	8.2	7.8	8.2	8.0	11.8	8.2	7.3	7.1	7.2	7.1	7.9	7.6
19	8.1	7.7	8.3	8.0	8.3	8.0	7.4	7.2	7.2	7.1	7.6	7.3
20	7.9	7.7	8.3	8.0	8.1	7.7	7.3	7.1	7.2	7.1	7.6	7.4
21	8.2	7.7	8.4	8.1	8.1	7.8	7.3	7.3	7.3	7.1	7.6	7.5
22	8.3	7.8	8.5	7.1	7.8	7.3	7.4	7.1	7.4	7.2	7.7	7.6
23	8.5	7.8	8.4	7.5	8.0	7.6	7.3	7.1	7.6	7.3	7.8	7.5
24	8.7	7.8	8.3	8.0	7.9	7.9	7.3	7.2	7.6	7.3	7.7	7.6
25	8.4	7.6	8.2	8.0	8.0	7.7	7.3	7.3	7.3	7.1	7.8	7.4
26	7.8	7.6	8.2	7.9	8.4	7.7	7.4	7.2	7.3	7.1	7.8	7.4
27	8.0	7.7	8.2	8.0	8.5	7.2	7.8	7.3	7.3	7.2	8.1	7.8
28	8.1	7.8	8.1	7.8	10.8	7.1	7.4	7.2	7.2	7.1	8.2	7.9
29	8.0	7.8	8.5	8.0	10.0	7.8	7.3	7.1	---	---	7.9	7.5
30	8.2	7.8	8.3	7.9	8.9	7.6	7.3	7.2	---	---	7.9	7.5
31	8.3	7.7	---	---	9.0	7.9	7.2	7.1	---	---	8.1	7.9
MONTH	8.9	7.4	8.6	7.1	11.8	7.1	8.8	6.8	7.6	6.7	8.2	7.1

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.2	7.9	8.0	7.4	7.4	7.2	7.9	7.5	7.9	7.5	7.4	7.2
2	8.2	7.3	8.0	7.5	7.5	7.3	8.2	7.9	7.8	7.4	7.3	7.2
3	8.1	7.7	8.4	7.4	7.5	7.4	8.2	7.7	7.5	7.2	7.6	7.3
4	7.8	7.4	8.5	7.7	7.4	6.8	7.9	7.7	7.3	7.2	8.0	7.4
5	7.9	7.4	8.1	7.5	7.1	6.9	7.9	7.5	7.4	7.3	8.1	7.8
6	---	---	8.2	7.4	7.8	7.2	7.6	7.3	7.6	7.3	8.0	7.8
7	---	---	8.1	7.7	7.8	7.5	7.9	7.2	7.6	7.4	7.9	7.6
8	---	---	8.3	7.6	7.5	7.1	7.6	7.2	7.7	7.4	7.8	7.6
9	---	---	8.4	7.7	7.2	6.9	7.4	7.2	7.7	7.4	7.7	7.5
10	---	---	8.5	7.8	7.5	7.2	7.6	7.4	7.6	7.5	7.6	7.5
11	---	---	8.3	7.7	7.6	7.3	7.6	7.3	7.5	7.1	7.6	7.4
12	---	---	8.2	7.7	7.4	7.3	7.5	7.2	7.6	7.3	7.7	7.4
13	---	---	8.1	7.7	7.5	7.4	7.5	7.4	7.5	7.2	7.6	7.4
14	---	---	8.0	7.6	7.5	7.2	7.5	7.3	7.6	7.3	8.0	7.3
15	---	---	8.0	7.7	7.5	7.3	7.5	7.3	7.8	7.5	8.2	7.8
16	---	---	7.9	7.7	7.4	7.1	7.6	7.4	7.8	7.5	8.1	7.1
17	---	---	7.9	7.5	7.1	6.7	7.7	7.4	7.8	7.4	7.4	7.0
18	---	---	7.8	7.4	7.4	6.8	7.7	7.5	8.0	7.8	7.3	6.7
19	---	---	7.6	7.4	7.3	7.2	7.7	7.4	7.9	7.7	7.7	7.0
20	---	---	7.6	7.2	7.3	7.1	7.6	7.3	8.0	7.8	7.9	7.2
21	---	---	7.4	7.2	7.3	7.1	7.6	7.2	8.0	7.7	7.8	7.6
22	---	---	7.4	7.2	7.4	7.0	7.5	7.3	7.9	7.5	7.9	7.5
23	---	---	7.3	7.2	7.4	7.2	7.5	7.3	7.9	7.6	7.8	7.5
24	---	---	7.3	7.2	7.3	7.0	7.5	7.3	8.1	7.7	7.6	7.1
25	---	---	7.4	7.1	7.2	7.1	7.7	7.3	8.2	7.9	8.0	7.1
26	---	---	7.4	7.2	7.4	7.2	7.8	7.5	8.1	7.8	8.2	7.2
27	---	---	7.4	7.2	7.5	7.3	8.0	7.6	7.9	7.5	8.2	7.9
28	7.6	7.2	7.4	7.1	7.6	7.3	8.0	7.5	7.6	7.3	8.1	7.9
29	7.7	7.3	7.5	7.2	7.5	7.3	7.6	7.4	7.7	7.4	8.1	7.9
30	7.7	7.3	7.5	7.4	7.5	7.4	7.8	7.5	7.7	7.4	8.1	7.6
31	---	---	7.5	7.2	---	---	7.7	7.4	7.5	7.3	---	---
MONTH	8.2	7.2	8.5	7.1	7.8	6.7	8.2	7.2	8.2	7.1	8.2	6.7
YEAR	11.8	6.7										

04212200 GRAND RIVER AT PAINESVILLE, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	14.5	7.0	6.0	2.0	1.0	1.0	0.5	1.0	0.5	1.0	0.0
2	18.5	16.0	6.0	5.0	2.5	1.5	0.5	0.0	1.5	0.5	1.0	0.0
3	20.0	17.5	7.0	6.0	2.5	1.5	0.5	0.5	1.5	1.0	1.5	0.0
4	21.0	18.5	6.5	5.5	3.0	2.0	1.0	0.5	1.5	1.0	3.0	1.0
5	21.5	19.0	5.5	5.0	3.5	2.0	1.0	0.5	1.5	1.0	2.0	1.0
6	21.5	20.5	6.5	4.5	3.5	2.5	1.0	0.0	1.0	0.5	2.5	1.0
7	21.0	19.5	6.5	6.0	3.5	2.0	1.0	0.5	1.0	0.5	2.5	1.5
8	20.0	19.0	5.5	4.0	2.0	1.0	1.0	0.0	1.0	0.0	4.0	1.0
9	19.5	17.0	5.0	3.0	1.0	0.0	1.5	0.0	1.5	1.0	6.5	4.0
10	17.0	12.5	7.5	4.5	1.5	0.5	1.0	0.5	1.5	0.5	7.5	6.0
11	13.0	11.5	7.5	6.0	0.5	0.0	1.0	0.0	2.0	1.0	8.5	6.5
12	13.5	11.5	6.5	5.0	0.5	0.0	0.5	0.0	2.0	1.0	9.5	8.0
13	16.0	13.0	6.0	4.5	0.5	0.0	0.5	0.0	1.5	1.0	10.5	9.5
14	16.0	14.0	5.5	4.0	1.5	0.0	2.5	0.0	1.0	1.0	10.0	9.0
15	17.0	14.0	5.0	3.0	1.5	0.5	2.5	0.5	1.5	1.0	10.5	8.0
16	16.0	14.5	5.0	3.0	2.0	0.5	1.0	0.5	1.0	0.5	10.5	9.0
17	16.0	14.0	5.0	3.0	2.5	1.0	1.0	0.5	1.0	0.5	10.0	8.0
18	14.0	13.0	6.0	4.0	3.5	1.5	0.5	0.0	1.5	1.0	9.0	4.0
19	14.0	12.5	7.0	5.5	3.0	1.5	1.0	0.5	1.5	1.0	4.5	3.0
20	15.0	13.5	6.5	5.0	3.0	0.0	1.0	0.0	1.5	1.0	4.5	3.0
21	15.0	10.0	6.5	5.0	0.5	0.0	1.0	0.5	1.5	1.0	5.5	3.0
22	10.0	6.5	5.5	3.5	0.5	0.0	1.0	0.5	2.0	1.0	5.0	3.5
23	7.0	5.5	4.0	3.0	1.0	0.5	1.0	0.0	2.0	1.5	5.0	3.0
24	7.0	6.5	4.5	3.0	1.0	0.5	1.0	0.5	2.0	1.5	4.5	3.0
25	7.5	7.0	5.0	2.5	1.5	0.0	1.0	0.5	1.5	1.5	5.0	2.0
26	7.5	6.5	7.5	4.5	1.5	0.0	1.5	0.5	1.5	1.0	5.5	2.5
27	7.0	6.5	7.5	5.0	1.5	0.5	1.5	0.5	1.5	1.0	7.5	4.5
28	7.0	6.0	5.5	4.0	1.5	1.0	1.0	0.5	1.5	0.5	9.0	7.5
29	8.0	5.0	4.0	1.0	1.0	0.5	1.0	0.5	---	---	12.0	9.0
30	8.5	7.0	1.0	0.0	1.0	0.0	0.5	0.0	---	---	14.5	11.0
31	9.0	7.0	---	---	1.0	0.0	1.0	0.5	---	---	14.5	11.0
MONTH	21.5	5.0	7.5	0.0	3.5	0.0	2.5	0.0	2.0	0.0	14.5	0.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.0	10.0	17.5	14.0	23.5	22.5	24.5	23.0	27.5	25.5	27.5	26.0
2	12.0	11.0	17.5	16.5	22.5	19.0	23.5	23.0	26.5	23.5	28.0	27.0
3	12.5	11.5	18.5	15.0	19.0	17.0	25.0	23.5	26.0	24.5	28.0	27.5
4	11.5	10.0	18.0	16.5	19.0	17.5	25.5	24.0	27.5	25.0	27.0	25.0
5	11.5	9.5	19.0	16.0	20.5	18.5	27.5	25.0	28.0	26.5	26.5	24.5
6	9.5	6.5	21.5	19.5	20.5	17.5	28.0	27.0	28.0	26.5	25.0	24.0
7	7.0	5.5	21.0	19.0	17.5	14.5	31.0	26.5	26.5	25.0	24.0	23.5
8	7.0	4.5	18.5	17.5	16.5	15.0	27.0	24.0	26.0	23.5	24.0	23.0
9	7.0	3.0	16.5	14.0	17.0	16.0	25.5	23.5	25.0	22.0	24.5	23.0
10	8.0	4.5	17.5	14.0	18.0	16.5	26.5	24.0	24.5	22.0	24.5	23.5
11	12.0	7.5	18.0	16.0	20.0	18.0	26.5	24.5	25.0	20.5	23.5	21.5
12	14.5	12.5	19.5	16.5	20.0	19.0	27.0	25.5	25.0	21.5	22.0	20.0
13	18.0	14.5	17.5	16.0	19.0	18.5	27.5	26.5	23.5	22.0	20.5	20.0
14	19.0	16.5	19.5	18.0	22.5	19.0	29.0	27.5	24.0	22.5	20.5	19.0
15	18.0	15.0	20.5	19.5	23.0	20.5	29.0	28.0	24.5	22.0	19.5	18.5
16	17.5	15.5	20.5	19.5	24.5	22.0	30.0	29.0	24.0	22.5	18.0	17.0
17	17.5	14.5	23.0	20.5	24.0	23.0	29.5	29.0	24.5	23.5	19.0	17.5
18	18.0	16.0	25.0	22.5	24.5	23.5	30.0	29.0	23.5	21.0	19.0	18.5
19	20.0	17.5	26.0	24.5	24.0	21.0	29.5	27.5	23.0	20.5	20.0	19.0
20	20.5	19.5	27.0	23.5	23.5	22.5	29.5	25.5	22.0	20.5	20.0	19.0
21	21.5	20.0	27.0	25.0	24.5	22.0	29.0	26.0	22.5	20.5	19.0	18.0
22	21.5	20.5	26.5	26.0	25.0	22.5	27.5	25.0	21.0	18.5	18.0	16.5
23	21.0	14.0	27.0	26.0	25.0	23.5	27.0	25.0	20.0	19.5	18.5	16.5
24	14.0	13.0	27.0	26.0	25.5	18.0	27.5	25.0	21.0	20.0	18.5	17.5
25	13.0	12.0	29.0	26.0	25.5	24.0	27.0	25.5	21.5	18.5	20.5	18.0
26	13.0	11.5	27.5	26.5	28.0	25.5	26.5	23.0	22.5	19.0	20.5	19.0
27	13.5	10.5	26.5	24.5	27.5	26.0	25.5	23.0	25.0	21.5	19.0	18.0
28	13.5	11.5	25.5	24.0	27.5	26.0	25.5	22.5	27.0	24.5	18.5	17.5
29	13.5	10.0	25.0	24.0	27.0	26.0	25.5	24.5	27.5	26.5	18.0	17.0
30	15.0	12.0	24.0	21.5	26.5	24.5	26.0	23.5	26.5	25.5	18.0	16.5
31	---	---	23.0	21.0	---	---	26.0	24.0	28.0	25.5	---	---
MONTH	21.5	3.0	29.0	14.0	28.0	14.5	31.0	22.5	28.0	18.5	28.0	16.5
YEAR	31.0	0.0										

04212200 GRAND RIVER AT PAINESVILLE, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	9.3	9.0	10.8	9.9	11.9	11.5	12.6	12.3	8.1	7.9	12.9	12.6
2	9.0	8.6	10.8	10.4	11.6	10.9	12.4	12.0	8.0	7.8	13.1	12.9
3	8.7	7.4	10.7	10.3	11.5	10.9	12.3	11.8	8.2	8.0	13.2	13.0
4	8.3	7.2	10.8	10.3	11.4	10.7	11.8	11.4	8.3	8.1	13.1	12.7
5	7.6	6.3	10.7	10.4	11.1	10.6	11.7	11.5	8.2	8.0	13.3	12.8
6	7.0	4.7	11.0	10.5	11.2	10.7	11.7	11.5	8.2	7.9	13.5	13.2
7	7.3	4.4	10.9	9.5	11.1	10.5	11.7	11.3	8.1	8.0	13.4	13.1
8	6.9	5.2	11.4	7.8	11.3	10.5	11.4	11.1	8.2	8.0	13.5	12.9
9	6.9	4.9	11.5	8.3	13.1	11.0	11.3	11.1	8.1	8.0	12.9	12.3
10	7.7	5.1	11.4	10.5	12.8	12.5	11.2	10.7	8.2	8.1	12.4	12.1
11	7.6	7.0	11.9	10.5	12.7	12.5	10.8	10.6	8.6	8.2	12.3	11.9
12	---	---	11.9	11.1	12.7	12.2	10.8	10.4	9.4	8.6	11.9	11.5
13	---	---	12.3	11.5	12.6	12.2	10.5	10.0	10.7	9.4	11.4	11.0
14	9.7	8.8	12.6	11.5	12.6	12.4	10.0	9.7	10.9	10.6	11.4	11.0
15	9.7	8.6	12.5	9.6	12.5	12.0	9.9	9.5	10.9	10.7	11.6	10.4
16	9.3	8.3	12.6	8.3	12.3	11.9	9.6	9.4	11.5	10.7	10.7	10.4
17	9.3	8.0	12.4	11.5	12.1	11.5	9.7	9.3	11.3	11.0	11.0	10.6
18	9.2	8.5	12.0	9.7	12.8	11.2	9.4	9.1	11.1	10.8	11.9	10.7
19	9.7	8.0	12.5	11.0	12.7	12.0	9.0	8.6	10.8	10.7	12.1	11.7
20	9.2	7.7	11.1	10.8	12.3	11.0	8.7	8.5	10.7	10.5	12.0	11.7
21	8.7	7.9	12.7	11.1	13.1	11.8	8.7	8.5	10.5	10.5	12.2	11.7
22	9.6	8.5	12.6	11.2	13.1	13.0	8.6	8.5	10.5	10.5	12.0	11.7
23	10.2	9.5	12.5	11.8	13.0	12.9	8.7	8.6	10.9	10.5	12.1	11.8
24	9.4	9.3	13.3	11.5	12.9	12.9	8.7	8.6	12.0	11.1	12.1	11.9
25	9.3	9.1	12.9	11.6	13.1	12.8	8.7	8.6	11.9	11.0	12.3	11.9
26	9.4	9.2	12.6	10.8	12.9	12.7	8.6	8.4	11.7	11.5	12.3	11.6
27	9.7	9.3	11.0	10.4	12.9	12.6	8.8	8.5	11.6	11.5	12.0	11.4
28	10.5	9.4	11.0	10.7	12.9	12.5	8.7	8.4	12.6	11.5	11.3	10.9
29	10.6	10.2	11.7	10.8	12.7	12.5	8.6	8.2	---	---	10.9	10.4
30	10.2	9.8	12.5	11.6	12.8	12.2	8.3	8.1	---	---	10.5	9.7
31	9.9	9.4	---	---	12.5	12.3	8.1	7.9	---	---	10.5	9.8
MONTH	10.6	4.4	13.3	7.8	13.1	10.5	12.6	7.9	12.6	7.8	13.5	9.7

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.8	10.4	10.5	9.2	2.3	0.9	8.4	0.2	7.3	4.5	1.6	.0
2	10.8	9.9	9.6	7.4	2.9	1.9	7.9	6.7	6.5	4.5	0.5	.0
3	10.5	10.0	11.4	8.4	3.8	2.5	7.4	5.5	4.3	1.6	3.0	0.3
4	10.5	10.2	11.3	8.3	3.5	2.6	7.8	4.7	2.6	1.2	6.6	0.7
5	11.0	7.8	10.6	8.6	2.3	0.5	7.8	4.9	1.7	0.2	6.6	5.1
6	11.6	10.6	10.2	7.7	5.5	0.7	4.9	2.5	4.8	0.2	5.9	4.9
7	11.9	11.3	10.1	8.1	6.6	5.3	7.0	0.2	5.8	4.8	5.1	4.2
8	12.2	11.8	10.2	9.9	7.7	5.5	11.2	7.1	6.8	4.8	5.7	4.1
9	12.4	11.9	10.9	9.2	9.1	7.2	8.3	7.9	7.1	6.7	4.5	3.0
10	12.2	11.6	10.8	9.2	9.1	8.0	8.7	6.0	7.2	6.4	2.8	1.2
11	11.7	10.7	10.8	8.4	9.0	6.6	7.7	7.0	7.3	6.4	3.3	0.5
12	10.9	9.9	9.6	8.4	6.8	5.0	6.3	5.6	7.8	6.4	3.9	1.0
13	9.9	9.5	8.7	8.1	6.4	4.5	6.2	4.6	7.5	7.3	2.4	0.2
14	10.7	9.1	8.2	7.2	8.2	5.3	5.0	3.0	7.8	7.4	6.9	0.2
15	11.5	9.2	8.2	7.0	7.5	4.5	5.4	3.5	8.3	7.7	8.0	6.7
16	11.6	9.0	7.9	6.4	6.4	2.9	6.1	4.4	7.7	7.1	7.9	7.3
17	11.9	9.4	6.2	5.1	3.2	1.0	5.0	3.5	7.8	7.0	7.9	7.1
18	11.9	8.5	5.1	3.6	6.9	1.1	5.5	3.7	8.4	7.5	7.8	6.8
19	10.7	8.0	4.5	2.3	6.5	5.3	3.5	2.3	8.6	7.5	7.3	6.7
20	10.0	7.3	3.6	1.9	5.5	3.1	7.3	6.0	8.9	7.4	7.6	6.8
21	8.9	7.1	2.7	1.0	4.5	1.3	7.6	6.5	8.9	7.7	7.9	7.1
22	8.3	6.8	2.6	0.5	4.7	0.4	7.6	6.6	9.5	7.7	7.9	7.4
23	9.5	7.2	2.3	1.2	3.8	0.8	6.9	5.5	9.2	8.1	7.8	7.0
24	9.7	9.5	2.3	0.8	2.3	0.1	5.7	3.7	8.5	8.1	7.6	7.0
25	9.9	9.7	2.1	0.4	0.7	0.1	6.0	3.9	9.1	7.9	7.3	6.6
26	10.0	9.9	1.3	0.2	1.5	0.1	7.4	5.7	8.7	7.5	7.6	6.2
27	10.3	9.8	2.3	0.7	4.1	0.2	8.4	6.7	8.4	5.4	7.6	7.0
28	10.8	9.8	2.0	0.1	5.7	0.4	7.4	5.3	5.0	3.2	7.6	6.8
29	10.9	10.1	2.8	0.5	1.9	0.2	4.7	3.4	5.4	2.5	8.0	6.6
30	10.7	9.9	3.7	2.4	0.7	0.2	6.5	4.2	4.8	2.3	7.6	6.9
31	---	---	3.6	2.3	---	---	6.3	5.6	3.6	0.2	---	---
MONTH	12.4	6.8	11.4	0.1	9.1	0.1	11.2	0.2	9.5	0.2	8.0	.0
YEAR	13.5	.0										

04212500 ASHTABULA RIVER NEAR ASHTABULA, OH

LOCATION.--Lat 41°51'20", long 80°45'44", Ashtabula County, Hydrologic Unit 04110003, on left bank at downstream side of State Road bridge, 1.1 mi (1.8 km) upstream from Hubbard Run, 1.3 mi (2.1 km) southeast of Ashtabula, and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--121 mi² (313 km²).

PERIOD OF RECORD.--July 1924 to December 1935, March 1939 to November 1947, March 1950 to current year.

REVISED RECORDS.--WSP 954: 1929(M). WSP 974: 1942. WSP 1437: 1926, 1932, 1934. WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 612.50 ft (186.690 m) above mean sea level, unadjusted. Prior to Aug. 27, 1924, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are fair.

AVERAGE DISCHARGE.--46 years, 150 ft³/s (4.248 m³/s), 16.84 in/yr (428 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s (329 m³/s) Jan. 22, 1959, gage height, 11.03 ft (3.362 m); no flow at times during most years.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 2,600 ft³/s (73.6 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Dec. 21	0345	2710	76.7	4.24	1.292	Apr. 23	2145	2880	81.6	4.20	1.280
Feb. 24	1545	--	--	a/*6.80	2.073	July 20	0930	*3840	109	5.01	1.527
Feb. 25	0500	3380	95.7	4.82	1.469						

Minimum discharge, 1.9 ft³/s (0.054 m³/s) June 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	404	130	65	44	485	123	78	4.8	6.0	49	13
2	31	228	113	60	44	300	255	63	3.7	6.5	34	19
3	20	132	93	60	44	246	1040	56	3.3	3.6	23	58
4	19	93	90	55	44	545	452	58	3.6	3.6	17	57
5	11	69	86	55	44	1370	414	98	3.1	3.3	21	35
6	7.5	56	93	55	44	515	465	126	4.4	3.8	600	23
7	6.0	51	234	55	44	280	295	86	4.4	206	613	17
8	6.5	56	1080	50	44	197	530	58	3.6	310	359	13
9	19	69	888	50	44	210	360	42	4.7	142	436	11
10	234	66	564	50	55	237	260	32	4.7	70	518	9.0
11	222	156	610	48	100	184	179	26	4.4	40	389	7.0
12	113	216	844	48	250	149	126	22	4.1	25	1430	16
13	66	165	492	48	400	1190	97	19	4.7	42	616	22
14	46	185	277	46	250	730	79	17	4.1	40	201	425
15	34	160	200	46	190	305	68	14	3.3	29	208	304
16	25	128	140	46	160	188	55	11	2.9	20	107	185
17	19	106	136	46	130	142	45	9.5	2.7	16	71	520
18	16	93	136	46	120	614	40	9.5	5.5	11	90	415
19	14	89	120	44	110	1490	38	7.8	32	472	60	439
20	19	83	600	44	100	1010	35	7.2	23	2890	42	1170
21	46	69	750	44	95	1000	34	4.9	9.9	761	36	750
22	148	69	234	44	250	982	42	3.9	5.5	181	268	392
23	291	110	140	44	600	916	1060	3.3	3.8	81	295	201
24	447	246	120	44	1500	578	1950	3.1	3.1	49	130	138
25	932	200	100	44	2770	265	680	2.6	2.9	44	88	364
26	465	537	90	44	1490	163	420	2.3	2.5	131	58	891
27	205	1110	80	44	1040	132	587	3.1	2.2	91	39	873
28	124	388	75	44	1010	316	241	7.6	2.2	51	28	234
29	86	210	70	44	---	872	143	4.8	2.5	35	21	110
30	69	152	70	44	---	310	100	4.9	2.2	152	16	75
31	106	---	65	44	---	163	---	6.1	---	73	15	---
TOTAL	3895.0	5696	8720	1501	11016	16084	10213	886.6	163.8	5988.8	6878	7786.0
MEAN	126	190	281	48.4	393	519	340	28.6	5.46	193	222	260
MAX	932	1110	1080	65	2770	1490	1950	126	32	2890	1430	1170
MIN	6.0	51	65	44	44	132	34	2.3	2.2	3.3	15	7.8
CFSM	1.04	1.57	2.32	.40	3.25	4.29	2.81	.24	.05	1.60	1.84	2.15
IN.	1.20	1.75	2.68	.46	3.39	4.94	3.14	.27	.05	1.84	2.11	2.39

CAL YR 1976 TOTAL 71817.54 MEAN 196 MAX 3530 MIN .94 CFSM 1.62 IN 22.08
WTR YR 1977 TOTAL 78829.00 MEAN 216 MAX 2890 MIN 2.2 CFSM 1.79 IN 24.23

a/ Ice jam.

04212700 ASHTABULA RIVER AT ASHTABULA, OH

LOCATION.--Lat 41°58'00", long 80°47'44", in T.13 N., R.3 W., Ashtabula County, Hydrologic Unit 04110003, on right bank at Jack's Automarine in Ashtabula, 600 ft (183 m) upstream from bridge on State Highway 531, 4,000 ft (1,219 m) upstream from mouth, and 4,000 ft (1,219 m) downstream from Fields Brook.

DRAINAGE AREA.--136 mi² (352 km²).

PERIOD OF RECORD.-- Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1968 to current year.
pH: June 1968 to current year.
WATER TEMPERATURES: June 1968 to current year.
DISSOLVED OXYGEN: June 1968 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Interruptions in the water-quality record were due to malfunction of the instrument. See records of discharge for gaging station near Ashtabula (station 04212500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 3,000 micromhos Aug. 20, 1970, Dec. 20, 1973, Jan. 27, Feb. 3, 4, Aug. 30, Sept. 1, 1974; minimum, 39 micromhos June 18, 1972.
pH: Maximum, 11.7 units Aug. 22, 1970; minimum, 4.4 units Sept. 28, 1970.
WATER TEMPERATURES: Maximum, 29.0°C Aug. 23, 24, 1968, July 7, 1977; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN: Maximum, 15.0 mg/L or higher Feb. 22-28, 1971, Feb. 13-15, Dec. 15-17, 1973; minimum, 0.0 mg/L Mar. 16, 17, 1971.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,230 micromhos June 15; minimum, 180 micromhos July 20.
pH: Maximum, 8.9 units Oct. 3, 4; minimum, 6.4 units Sept. 16.
WATER TEMPERATURES: Maximum, 29.0°C July 7; minimum, 0.0°C on many days during winter period.
DISSOLVED OXYGEN: Maximum, 13.4 mg/L Dec. 20; minimum, 1.9 mg/L June 20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR 10...	1000	246	530	7.4	6.5	10.6	86	2.3	130	100	44	5.7
JUN 28...	0815	1.9	1740	7.5	25.5	5.3	64	2.3	490	400	180	10

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR 10...	36	3.6	49	0	33	2.5	45	91	.1	4.8	250	.50
JUN 28...	120	3.9	106	0	87	5.4	71	410	.3	.9	849	.44

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR 10...	.01	.13	.01	1	10	4	100	7	90	.0	20	6.3
JUN 28...	.05	.37	.04	3	10	9	10	2	430	.0	50	6.7

04212700 ASHTABULA RIVER AT ASHTABULA, OH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	450	369	981	390	711	564	444	414	363	330	363	297
2	468	366	456	396	939	711	420	378	354	318	330	294
3	489	390	564	465	852	462	399	372	357	312	339	291
4	594	399	573	552	768	648	405	348	354	306	609	306
5	681	561	669	582	792	597	360	345	357	303	339	219
6	810	672	714	660	744	519	351	345	342	297	360	261
7	1070	810	843	666	1020	750	360	342	360	306	450	306
8	1110	543	1070	816	1030	477	348	339	363	306	552	300
9	1160	495	1100	975	504	405	348	339	363	318	672	525
10	1300	711	1040	942	489	402	375	336	366	330	567	366
11	768	438	1050	834	741	465	360	336	375	333	573	384
12	501	405	801	564	669	444	345	336	384	327	684	483
13	651	438	645	576	606	522	366	339	384	330	990	288
14	756	576	627	570	705	570	366	333	612	348	366	309
15	861	684	555	447	765	609	348	336	645	585	456	345
16	948	807	513	375	696	567	345	333	594	534	633	444
17	915	822	633	378	849	552	366	333	540	495	663	555
18	1110	624	822	597	714	546	351	336	498	480	816	315
19	858	570	867	631	636	504	357	333	480	435	345	249
20	648	513	900	759	1120	573	348	327	438	405	423	300
21	882	642	771	630	717	330	345	339	414	399	381	327
22	1150	894	861	741	498	384	348	330	438	402	399	309
23	1010	495	888	792	543	489	384	324	600	423	411	297
24	558	444	948	846	564	513	348	318	732	381	456	342
25	432	312	1010	939	618	561	345	321	351	228	387	300
26	477	318	1340	444	615	507	348	318	273	222	540	339
27	471	384	399	321	573	417	348	321	309	273	660	378
28	519	372	423	351	489	408	363	321	321	300	951	564
29	648	525	558	354	489	423	354	321	---	---	534	342
30	672	630	567	540	447	414	348	330	---	---	486	341
31	981	645	---	---	453	420	360	324	---	---	633	489
MONTH	1300	312	1340	321	1120	330	444	318	732	222	990	219

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	774	627	732	579	1160	993	1640	1310	870	696	1460	840
2	867	645	909	651	1200	1060	1990	1590	1080	870	1550	1070
3	642	291	1170	744	1370	1130	1970	1660	1130	876	1710	1250
4	414	297	1370	1120	1520	1070	1960	1770	1170	1020	1750	1490
5	576	390	1390	972	1460	1000	1990	1720	1310	927	1470	1200
6	471	333	1060	768	1140	1000	2120	1410	1370	342	1480	1220
7	510	447	936	723	1320	1130	1880	822	411	336	1580	1470
8	570	381	957	669	1670	1280	828	468	483	342	1630	1030
9	429	366	969	711	1640	1310	498	456	438	342	1500	1050
10	567	384	1070	963	1570	813	624	498	540	333	1360	1040
11	582	462	1120	984	1400	1060	840	615	402	294	1560	1190
12	744	510	1190	816	1620	1250	846	573	459	201	1700	1400
13	690	585	1090	933	1570	1070	1050	717	351	219	2220	1600
14	948	660	1190	987	2090	1200	972	732	513	333	2100	408
15	1040	720	1250	1060	2230	435	996	693	531	393	516	381
16	978	684	1370	705	1590	456	801	666	624	447	696	381
17	1130	864	1290	597	1830	840	903	720	648	540	594	387
18	1190	897	1330	573	1610	1150	1100	723	822	585	447	356
19	1240	900	1260	882	1810	1110	1380	402	750	681	450	348
20	1190	822	1240	786	1770	1130	381	180	759	561	411	240
21	1110	903	1260	837	1460	1160	291	189	738	453	333	257
22	1200	819	1060	738	1560	1360	321	288	1160	420	417	309
23	1500	279	852	612	1640	1170	474	318	489	357	546	405
24	273	222	972	687	1830	1110	666	438	642	468	624	504
25	366	270	969	678	1880	1110	993	630	759	432	852	378
26	516	354	933	708	1530	1220	1200	747	684	438	465	237
27	390	312	1070	828	1690	840	741	420	1220	552	279	201
28	507	327	1130	936	1940	762	735	423	1230	810	399	285
29	645	537	969	876	1610	1050	1050	732	1110	807	570	350
30	618	546	1190	921	1440	1060	1120	759	1020	840	702	543
31	---	---	1500	1120	---	---	831	750	1690	1090	---	---
MONTH	1500	222	1500	573	2230	435	2120	180	1690	201	2220	201
YEAR	2230	180										

04212700 ASHTABULA RIVER AT ASHTABULA, OH--Continued

PH (UNITS), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.7	8.3	7.5	7.0	7.8	7.5	8.0	7.9	8.3	8.2	7.5	7.3
2	8.8	8.6	7.5	7.1	7.8	7.4	8.0	7.9	8.4	8.3	7.5	7.2
3	8.9	8.5	7.4	7.2	8.1	7.8	8.0	7.8	8.4	8.2	7.5	7.2
4	8.9	8.8	7.4	7.2	8.2	7.7	8.0	7.6	8.3	8.2	7.4	7.3
5	8.6	8.5	7.8	7.4	8.0	7.8	8.1	7.9	8.4	8.3	7.4	7.2
6	8.5	8.1	7.8	7.3	8.1	7.5	8.1	8.0	8.4	8.3	7.5	7.3
7	8.1	8.0	7.6	7.4	7.7	7.2	8.1	7.9	8.4	8.3	7.6	7.5
8	8.2	7.9	7.8	7.5	7.6	7.1	8.1	8.1	8.4	8.3	7.7	7.5
9	8.3	7.9	8.3	7.7	7.5	7.0	8.2	8.1	8.4	8.2	7.7	7.5
10	7.9	7.6	8.3	7.3	7.4	6.8	8.2	8.1	8.3	8.0	7.7	7.3
11	8.2	7.5	7.8	7.1	7.3	6.8	8.1	8.1	8.2	7.9	7.4	7.3
12	8.2	7.8	7.7	7.0	7.5	7.0	8.1	8.1	8.2	8.2	7.5	7.2
13	8.0	7.6	7.7	7.0	7.6	7.2	8.3	8.1	8.2	8.1	7.8	7.4
14	7.9	7.5	7.8	7.2	7.8	7.1	8.3	8.2	8.3	7.6	7.5	7.4
15	7.8	7.6	7.7	6.9	---	---	8.3	8.2	7.7	7.3	7.5	7.4
16	7.7	7.6	7.7	6.8	---	---	8.3	8.3	7.4	7.2	7.5	7.3
17	7.8	7.7	7.5	7.0	---	---	8.4	8.3	7.3	7.1	7.6	7.4
18	8.0	7.7	7.5	6.9	---	---	8.3	8.2	7.2	7.0	7.6	7.2
19	8.1	7.8	7.4	7.0	---	---	8.3	8.2	7.1	7.0	7.3	7.1
20	8.2	8.0	7.5	7.3	---	---	8.3	8.1	7.2	7.0	7.5	7.3
21	8.0	7.8	7.8	7.3	7.6	7.3	8.3	8.2	7.2	7.0	7.8	7.5
22	7.9	7.4	7.8	7.6	7.3	7.0	8.3	8.2	7.2	6.9	7.6	7.4
23	7.5	7.1	8.1	7.7	7.3	7.1	8.4	8.3	7.1	6.9	7.6	7.5
24	7.6	7.1	8.1	7.6	7.4	7.2	8.3	8.2	7.3	7.1	7.6	7.5
25	7.4	7.2	8.0	7.9	7.4	7.3	8.4	8.2	7.2	6.9	7.6	7.4
26	7.5	7.3	8.1	7.0	7.6	7.2	8.4	8.2	7.2	7.0	7.8	7.5
27	7.6	7.3	7.2	6.9	8.0	7.5	8.4	8.3	7.3	7.1	7.7	7.5
28	7.6	7.3	7.5	7.2	8.0	7.6	8.4	8.3	7.5	7.3	7.7	7.5
29	7.7	7.3	7.8	7.4	8.0	7.7	8.4	8.3	---	---	7.7	7.6
30	7.5	7.2	8.0	7.5	8.1	7.8	8.4	8.3	---	---	7.6	7.5
31	7.6	7.4	---	---	8.0	7.8	8.3	8.3	---	---	7.8	7.7
MONTH	8.9	7.1	8.3	6.8	8.2	6.8	8.4	7.6	8.4	6.9	7.8	7.1

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.8	7.6	7.6	7.4	7.6	7.5	7.4	7.4	7.5	7.4	7.8	7.5
2	7.8	7.5	7.6	7.5	7.5	7.5	7.6	7.3	7.5	7.4	7.6	7.5
3	7.8	7.7	7.6	7.5	7.8	7.5	7.8	7.4	7.5	7.4	7.5	7.5
4	7.8	7.6	7.5	7.4	7.7	7.6	7.6	7.3	7.5	7.4	7.6	7.5
5	7.8	7.6	7.4	7.2	7.6	7.5	7.4	7.3	7.5	7.4	7.6	7.5
6	7.8	7.6	7.5	7.3	7.5	7.5	7.7	7.3	7.5	7.2	7.6	7.5
7	7.7	7.5	7.6	7.5	7.6	7.5	7.4	7.2	7.3	7.2	7.6	7.5
8	7.8	7.6	7.7	7.5	7.9	7.6	7.2	7.1	7.3	7.2	7.8	7.6
9	7.9	7.6	7.7	7.6	7.7	7.6	7.3	7.2	7.5	7.3	7.8	7.6
10	8.0	7.7	7.7	7.6	8.5	7.6	7.4	7.2	7.5	7.3	7.7	7.7
11	7.9	7.7	7.8	7.6	8.3	7.9	7.6	7.2	7.5	7.3	7.8	7.7
12	7.9	7.3	7.8	7.6	8.3	7.7	7.6	7.4	7.4	7.2	7.8	7.6
13	7.7	7.3	7.7	7.6	7.8	7.6	7.5	7.2	7.4	7.2	7.7	7.6
14	7.4	7.3	7.6	7.5	7.8	7.5	7.6	7.3	7.5	7.2	7.6	7.3
15	7.4	7.2	7.5	7.4	8.3	7.4	7.6	7.4	7.6	7.4	7.6	7.4
16	7.4	7.3	7.7	7.4	8.3	7.6	7.5	7.4	7.6	7.3	7.6	6.4
17	7.4	7.3	7.7	7.5	8.1	7.6	7.6	7.4	7.5	7.3	7.3	6.8
18	7.4	7.4	7.7	7.6	7.7	7.3	7.8	7.5	7.4	7.3	7.3	7.1
19	7.5	7.4	7.6	7.5	7.4	7.2	7.6	7.0	7.5	7.3	7.5	7.2
20	7.5	7.0	7.9	7.5	7.6	7.2	7.0	6.6	7.6	7.4	7.5	7.3
21	7.3	7.2	7.6	7.2	8.1	7.5	7.1	6.8	7.9	7.5	7.5	7.4
22	7.4	7.3	7.6	7.3	8.4	7.6	7.2	7.0	7.8	7.5	7.6	7.5
23	7.4	7.1	7.8	7.5	8.4	7.9	7.3	7.2	7.8	7.5	7.6	7.5
24	7.2	7.1	8.1	7.6	8.2	7.7	7.3	7.2	7.8	7.5	7.7	7.5
25	7.3	7.2	8.2	7.6	8.1	7.6	7.3	7.2	8.5	7.6	7.7	7.4
26	7.4	7.0	8.3	7.8	7.8	7.5	7.4	7.3	8.4	8.0	7.7	7.5
27	7.5	7.2	8.1	7.7	7.6	7.5	8.2	7.4	8.1	7.7	7.6	7.5
28	7.5	7.3	7.9	7.6	7.7	7.5	8.4	7.9	7.9	7.7	7.6	7.5
29	7.5	7.4	7.7	7.6	7.5	7.4	7.9	7.6	7.8	7.7	7.6	7.5
30	7.6	7.4	7.6	7.6	7.5	7.4	7.6	7.3	7.7	7.4	7.8	7.6
31	---	---	8.0	7.5	---	---	7.6	7.5	7.7	7.3	---	---
MONTH	8.0	7.0	8.3	7.2	8.5	7.2	8.4	6.6	8.5	7.2	7.8	6.4
YEAR	8.9	6.4										

04212700 ASHTABULA RIVER AT ASHTABULA, OH--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.0	16.0	7.0	5.0	0.5	0.5	0.5	0.5	0.0	0.0	0.5	0.0
2	17.5	16.5	6.0	4.5	1.0	0.5	0.5	0.0	0.0	0.0	0.5	0.0
3	18.0	17.0	6.5	4.5	1.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0
4	18.5	17.5	6.5	6.0	0.5	0.0	0.0	0.0	0.0	0.0	1.0	0.0
5	18.5	17.5	6.0	5.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0
6	18.0	17.5	5.0	4.5	1.0	0.0	0.5	0.0	0.5	0.0	1.5	0.0
7	17.5	17.5	5.0	4.5	1.0	0.5	0.0	0.0	0.5	0.0	1.5	0.5
8	17.5	16.5	5.0	4.5	1.0	0.5	0.5	0.0	0.5	0.0	2.0	1.0
9	16.5	15.5	4.5	3.0	0.5	0.0	0.0	0.0	0.5	0.0	5.0	2.0
10	15.5	11.5	3.5	3.0	0.5	0.0	0.0	0.0	0.0	0.0	7.0	5.5
11	13.5	11.0	4.0	3.5	1.0	0.0	0.0	0.0	0.0	0.0	8.0	7.0
12	13.0	11.5	3.5	2.5	0.5	0.0	0.0	0.0	0.0	0.0	9.0	7.0
13	13.5	11.5	3.0	2.5	0.5	0.0	0.5	0.0	0.0	0.0	10.0	8.5
14	13.0	12.5	3.0	2.0	0.5	0.0	0.5	0.0	0.0	0.0	9.5	9.5
15	13.0	12.5	2.0	1.0	0.5	0.0	0.0	0.0	0.5	0.0	10.5	8.5
16	13.0	12.5	1.5	1.0	0.5	0.0	0.5	0.0	0.5	0.0	10.5	9.5
17	12.5	11.5	2.0	1.0	1.0	0.0	0.5	0.5	0.5	0.0	10.0	8.5
18	11.5	11.0	2.5	2.0	0.5	0.0	0.5	0.0	0.5	0.0	8.5	2.0
19	11.0	10.5	4.0	3.0	1.0	0.0	0.5	0.0	0.0	0.0	3.5	1.0
20	11.5	11.0	4.0	4.0	2.5	0.5	0.0	0.0	0.5	0.0	3.5	2.5
21	11.0	10.0	4.0	3.5	0.5	0.0	0.0	0.0	0.5	0.0	4.5	2.0
22	10.0	8.0	4.0	3.0	0.5	0.0	0.0	0.0	0.5	0.0	4.5	3.0
23	7.5	5.0	3.0	2.0	0.5	0.0	0.5	0.0	0.5	0.0	4.5	2.0
24	6.5	6.0	2.0	1.0	0.5	0.0	0.5	0.0	0.5	0.0	4.0	2.5
25	7.0	6.5	2.0	1.0	0.5	0.5	0.0	0.0	0.0	0.0	4.0	2.0
26	7.0	6.5	3.5	2.0	0.5	0.0	0.0	0.0	0.0	0.0	5.0	2.5
27	7.0	5.5	5.5	2.5	0.5	0.0	0.5	0.0	0.0	0.0	6.5	3.5
28	5.5	5.0	5.5	4.5	0.0	0.0	0.5	0.0	0.0	0.0	9.5	6.0
29	6.0	5.5	4.5	1.0	0.5	0.0	0.5	0.5	---	---	13.5	9.0
30	6.0	5.5	1.0	0.0	0.5	0.0	0.5	0.5	---	---	13.5	11.0
31	7.0	6.0	---	---	0.5	0.0	0.5	0.0	---	---	14.0	12.0
MONTH	18.5	5.0	7.0	0.0	2.5	0.0	0.5	0.0	0.5	0.0	14.0	0.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.0	10.0	14.0	12.5	24.5	19.5	24.5	23.5	26.5	25.0	26.5	24.0
2	10.5	9.5	15.5	13.0	21.0	19.0	25.5	24.0	26.5	25.5	26.5	24.5
3	12.0	9.5	15.0	13.0	19.5	16.5	25.5	24.5	27.0	25.0	26.5	25.5
4	11.0	9.0	15.5	14.5	18.5	15.5	25.5	24.5	27.0	26.0	27.0	26.0
5	10.0	8.5	16.5	15.0	18.5	15.5	26.5	25.0	27.5	26.0	26.5	25.5
6	8.0	5.0	17.5	15.5	16.5	16.0	29.0	25.5	28.0	23.0	25.5	25.0
7	5.5	3.5	18.5	15.5	16.5	16.0	27.0	26.5	24.0	22.5	25.0	24.5
8	5.0	3.5	18.0	15.0	18.0	16.0	27.0	24.0	24.0	23.0	25.0	24.5
9	6.0	3.5	15.5	14.5	17.0	16.5	24.5	23.5	25.0	22.5	25.0	23.0
10	6.5	5.5	15.0	14.5	18.5	15.5	25.0	23.5	25.0	23.5	23.0	23.0
11	12.0	6.0	16.5	14.5	19.0	17.5	26.0	24.5	25.5	23.0	23.0	22.0
12	14.5	12.0	16.0	14.0	19.0	18.0	26.0	24.0	24.5	22.0	22.5	22.0
13	15.5	13.5	16.0	14.0	19.0	18.0	27.5	24.5	23.0	21.0	22.5	22.0
14	15.5	13.5	16.5	15.0	21.5	18.0	26.5	25.0	24.0	22.5	22.5	18.5
15	16.0	13.0	17.5	16.0	22.0	17.5	28.0	25.5	23.5	23.0	18.5	16.5
16	16.0	12.5	18.5	14.0	22.5	19.5	26.5	25.5	24.5	23.5	18.0	16.5
17	15.0	13.5	18.0	13.5	23.0	19.5	27.5	26.0	24.5	23.5	19.5	17.5
18	15.0	13.0	19.0	13.0	22.0	19.0	28.5	26.0	23.5	23.0	20.0	19.0
19	16.5	13.5	19.5	16.0	23.5	19.0	28.0	23.0	23.0	22.5	21.0	19.5
20	16.0	13.5	20.0	16.5	23.5	21.0	24.5	22.0	23.0	22.0	21.0	18.5
21	16.5	14.0	22.5	18.5	23.0	21.5	27.0	24.0	22.0	21.5	18.5	17.0
22	17.0	14.0	21.0	18.0	23.5	22.5	27.0	25.5	22.0	21.5	17.5	16.5
23	17.0	11.5	19.5	16.0	24.0	23.0	27.5	26.5	21.0	18.5	17.5	17.0
24	11.5	10.5	20.0	17.0	25.0	22.5	27.5	25.5	21.0	20.0	18.5	17.0
25	10.5	9.5	21.0	17.5	25.0	22.5	26.5	26.0	22.0	19.5	19.5	18.0
26	10.0	9.0	21.5	20.5	25.0	23.0	26.0	24.0	22.0	21.0	20.0	18.0
27	12.5	8.5	21.5	19.0	26.0	24.0	25.0	23.5	24.5	22.0	18.5	17.5
28	14.0	10.5	22.0	19.0	27.0	24.0	25.5	24.0	25.5	23.5	18.5	17.0
29	11.0	10.0	21.5	19.5	25.0	23.5	25.5	24.5	25.5	24.0	17.5	17.0
30	12.5	11.0	22.5	20.5	25.0	23.0	25.5	24.0	25.0	24.0	17.5	17.0
31	---	---	24.5	20.5	---	---	26.5	25.0	26.5	24.5	---	---
MONTH	17.0	3.5	24.5	12.5	27.0	15.5	29.0	22.0	28.0	18.5	27.0	16.5
YEAR	29.0	0.0										

04212700 ASHTABULA RIVER AT ASHTABULA, OH--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.1	9.1	11.3	10.0	12.0	11.1	12.6	12.3	12.4	12.2	12.7	12.3
2	12.0	9.8	11.3	11.0	11.9	11.6	12.6	12.4	12.5	12.3	12.6	12.2
3	12.4	9.9	11.4	10.7	12.8	11.8	12.6	12.4	12.5	12.2	12.3	11.9
4	12.5	10.8	10.7	10.4	12.5	11.7	13.0	12.3	12.4	12.2	12.2	11.4
5	11.8	9.8	10.6	10.2	12.1	11.7	13.1	12.9	12.3	12.1	12.6	12.1
6	9.6	8.2	10.8	10.3	12.2	11.3	13.1	12.9	12.4	12.1	12.7	12.2
7	8.2	7.5	10.7	10.4	11.6	11.0	13.0	12.8	12.2	12.0	12.5	12.0
8	8.1	7.1	10.6	10.5	12.4	11.1	13.1	12.9	12.3	12.0	12.3	12.0
9	8.3	7.2	11.2	10.5	12.7	12.3	13.0	12.9	12.2	11.9	12.1	11.4
10	8.6	7.0	11.3	11.0	12.9	12.0	12.9	12.7	12.0	11.8	11.3	10.5
11	9.4	8.3	11.4	11.1	12.2	11.7	12.9	12.7	12.0	11.8	10.9	10.4
12	9.3	8.8	12.2	11.6	12.5	12.0	12.8	12.7	12.0	11.8	11.0	10.2
13	9.0	8.4	12.2	11.8	12.3	12.0	12.7	12.6	12.0	11.8	10.5	9.8
14	8.7	8.3	12.3	11.8	12.9	12.0	12.8	12.5	11.9	11.5	10.3	10.1
15	8.4	7.9	12.8	12.0	12.2	11.7	12.6	12.4	11.8	11.7	10.5	10.1
16	8.1	7.7	12.9	12.0	12.4	11.8	12.6	12.4	12.0	11.6	10.2	9.5
17	7.9	7.5	12.7	12.1	12.1	11.0	12.7	12.5	11.8	11.2	10.2	9.8
18	9.0	7.5	12.1	11.8	11.9	11.3	12.7	12.4	11.2	10.7	12.1	10.0
19	9.1	8.1	11.9	11.5	12.0	11.6	12.7	12.5	10.7	10.5	12.7	12.0
20	9.3	2.8	11.7	11.3	13.4	10.9	12.7	12.5	10.8	10.6	12.2	11.5
21	8.7	8.4	11.6	11.3	12.7	10.3	12.7	12.4	10.9	10.8	12.4	11.5
22	8.8	8.2	11.4	11.2	12.7	12.4	12.6	12.4	11.0	10.8	12.0	11.2
23	11.5	9.2	11.4	11.3	12.5	12.1	12.6	12.5	10.9	10.7	12.5	11.7
24	11.4	10.7	11.8	11.4	12.3	12.1	12.6	12.3	11.8	10.8	12.3	11.7
25	10.7	10.6	12.1	11.7	12.2	11.9	12.5	12.3	12.3	11.6	12.6	11.9
26	10.9	10.7	12.1	11.1	12.3	11.9	12.5	12.3	12.5	12.1	12.5	11.5
27	11.0	10.6	11.6	10.5	12.9	12.0	12.6	12.5	12.5	12.0	12.3	11.3
28	11.4	10.9	11.1	10.2	12.9	12.3	12.6	12.4	12.7	12.4	11.4	10.2
29	10.9	10.5	11.1	10.5	12.7	12.2	12.6	12.4	---	---	10.4	9.5
30	10.9	10.6	12.1	11.2	12.8	12.5	12.5	12.2	---	---	9.8	9.4
31	10.8	9.9	---	---	12.6	12.3	12.5	12.2	---	---	9.5	8.9
MONTH	12.5	2.8	12.9	10.0	13.4	10.3	13.1	12.2	12.7	10.5	12.7	8.9

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.9	9.2	9.9	9.4	---	---	3.7	3.0	5.9	4.6	6.1	4.2
2	10.4	9.8	9.5	8.9	---	---	6.3	2.9	5.3	3.7	5.0	3.0
3	10.4	9.8	9.1	8.4	8.1	6.2	8.2	4.3	5.0	3.3	3.0	2.2
4	10.3	9.9	8.4	8.1	7.3	6.0	6.6	3.8	4.2	3.2	3.8	2.0
5	10.3	9.6	---	---	7.3	6.3	5.3	3.3	4.6	3.3	3.5	2.6
6	11.2	10.3	---	---	7.0	6.2	5.8	3.2	7.3	4.4	3.7	3.0
7	11.9	11.1	---	---	7.1	6.0	4.1	2.1	8.2	7.0	4.0	3.2
8	12.2	11.4	---	---	8.7	6.4	6.0	3.9	7.7	6.7	4.7	3.1
9	12.3	11.7	---	---	7.2	6.0	6.1	5.6	8.9	6.6	5.6	3.7
10	12.0	11.1	---	---	11.9	6.6	6.2	5.8	8.6	6.8	4.4	3.5
11	11.6	10.1	---	---	11.6	8.2	6.5	5.2	8.1	7.3	5.0	3.7
12	10.4	9.2	---	---	11.2	7.7	5.9	5.0	9.2	7.0	4.4	3.7
13	9.7	8.3	---	---	8.2	6.6	5.2	2.3	9.2	8.0	4.3	3.1
14	8.5	7.1	---	---	7.5	4.9	5.3	3.2	8.1	6.6	8.6	3.5
15	8.2	7.2	---	---	10.7	5.5	6.0	3.7	7.6	6.6	8.6	7.2
16	8.3	7.3	---	---	10.7	7.2	4.5	3.6	8.1	4.8	7.2	5.9
17	7.8	7.6	---	---	10.1	6.6	5.0	3.2	5.2	3.9	7.1	6.6
18	8.3	7.8	---	---	7.1	4.9	6.6	3.5	4.4	2.6	6.8	6.4
19	8.1	7.7	---	---	5.3	2.6	6.9	3.8	4.8	3.2	6.8	6.2
20	8.1	6.6	---	---	6.6	1.9	7.9	7.1	5.1	4.0	7.3	6.0
21	7.9	7.3	---	---	9.6	5.0	8.0	7.2	6.5	4.6	7.7	7.3
22	7.9	7.3	---	---	10.3	6.0	7.1	6.6	8.3	4.2	8.0	7.7
23	9.7	7.3	---	---	12.0	7.6	7.2	6.4	7.9	7.2	8.0	7.3
24	10.0	9.7	---	---	10.7	7.4	6.8	6.0	8.1	6.5	7.7	6.5
25	10.0	9.9	---	---	10.5	6.2	6.2	5.1	9.1	6.4	7.3	6.2
26	10.2	9.9	---	---	7.6	5.3	6.1	4.8	8.9	7.4	7.0	6.5
27	10.5	10.0	---	---	6.6	4.6	7.9	6.2	7.7	6.2	7.4	6.9
28	9.9	9.3	---	---	6.7	4.3	9.4	7.2	8.6	5.6	7.0	6.7
29	10.1	9.8	---	---	4.9	3.8	8.2	6.1	5.7	4.8	7.4	6.3
30	10.4	9.8	---	---	4.7	3.2	6.6	5.0	4.9	3.9	6.4	6.0
31	---	---	---	---	---	---	6.6	5.3	5.9	3.6	---	---
MONTH	12.3	6.6	9.9	8.1	12.0	1.9	9.4	2.1	9.2	2.6	8.6	2.0
YEAR	13.4	1.9										

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04213000 CONNEAUT CREEK AT CONNEAUT, OH

LOCATION.--Lat 41°55'37", long 80°36'15", Ashtabula County, Hydrologic Unit 04120101, on right bank at downstream side of Keefus Road bridge at Conneaut, and 6.4 mi (10.3 km) upstream from mouth.

DRAINAGE AREA.--175 mi² (453 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1922 to December 1935, March 1950 to September 1961 (published as "at Amboy"), October 1961 to current year.

REVISED RECORDS.--WSP 714: 1926. WSP 784: 1933. WSP 1437: 1923-25(M), 1926-30, 1931-32(M), 1933, 1935(M). WSP 1912: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 610.30 ft (186.019 m) above mean sea level, unadjusted. Prior to Aug. 17, 1924, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor.

AVERAGE DISCHARGE.--40 years, 260 ft³/s (7.363 m³/s), 20.18 in/yr (513 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s (481 m³/s) Jan. 22, 1959, gage height, 11.70 ft (3.566 m); maximum gage height, 12.94 ft (3.944 m) Mar. 4, 1934 (backwater from ice); minimum discharge, 0.2 ft³/s (0.006 m³/s) July 31, Aug. 1, 1933, Aug. 1, 2, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,900 ft³/s (82.1 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 25	2300	ice jam	ice jam	12.23	3.728	July 21	0400	*6460	183	*8.08	2.463
Apr. 24	1900	3310	93.7	6.24	1.902	Sept. 27	1400	3000	85.0	6.03	1.838

Minimum daily discharge, 13 ft³/s (0.37 m³/s) June 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	540	170	100	75	800	217	137	29	50	69	47
2	60	420	160	100	75	500	307	117	28	26	47	69
3	48	210	150	95	75	440	1100	103	25	23	37	191
4	37	148	140	95	75	800	1180	113	21	19	32	152
5	31	118	140	90	75	2200	428	198	19	18	38	91
6	27	98	140	90	75	800	444	285	25	25	1110	63
7	27	88	200	90	75	400	364	172	26	1110	1080	50
8	23	85	300	85	75	330	464	117	27	1210	738	42
9	42	85	520	85	80	360	488	98	31	336	550	35
10	277	95	307	80	100	595	331	73	26	139	671	31
11	504	178	285	80	250	484	273	66	36	76	599	36
12	202	337	394	80	500	325	198	60	31	72	1330	47
13	113	273	290	80	750	1100	152	57	26	274	1410	56
14	76	240	210	80	400	1860	127	53	21	249	534	731
15	79	217	158	80	310	575	108	49	19	103	727	1200
16	70	178	130	75	250	310	93	46	18	62	323	391
17	58	148	108	75	220	232	84	43	17	45	165	817
18	52	137	112	75	200	496	77	47	40	45	293	982
19	67	162	120	75	180	1290	73	43	96	796	191	1110
20	76	194	340	75	170	1320	73	40	99	2400	112	1930
21	90	182	330	75	160	1150	73	36	49	4020	92	1720
22	235	158	250	75	500	1560	80	34	28	353	738	653
23	358	150	210	75	1000	1890	1050	35	20	141	1250	335
24	476	127	180	75	3200	1130	2850	31	18	89	304	227
25	1320	146	160	75	5000	580	1850	29	16	82	187	695
26	1020	432	140	75	2500	307	674	29	14	88	122	1630
27	352	1830	130	75	1700	240	956	29	13	109	87	2660
28	196	1200	120	75	1200	325	535	29	15	63	69	653
29	139	388	110	75	---	1150	260	29	20	53	59	221
30	110	240	110	75	---	680	176	29	24	227	53	152
31	136	---	110	75	---	295	---	29	---	89	50	---
TOTAL	6385	8804	6224	2510	19270	24524	15085	2248	877	12392	13067	17007
MEAN	206	293	201	81.0	688	791	503	72.5	29.2	400	422	567
MAX	1320	1830	520	100	5000	2200	2850	285	99	4020	1410	2660
MIN	23	85	108	75	75	232	73	29	13	18	32	31
CFSM	1.18	1.67	1.15	.46	3.93	4.52	2.87	.41	.17	2.29	2.41	3.24
IN.	1.36	1.87	1.32	.53	4.10	5.21	3.21	.48	.19	2.63	2.78	3.62

CAL YR 1976 TOTAL 117527.0 MEAN 321 MAX 5500 MIN 9.0 CFSM 1.83 IN 24.98
WTR YR 1977 TOTAL 128393.0 MEAN 352 MAX 5000 MIN 13 CFSM 2.01 IN 27.29

04213000 CONNEAUT CREEK AT CONNEAUT, OH--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)
MAR												
16...	1100	342	190	7.6	8.0	10.8	91	1.5	69	33	20	4.7
JUN												
28...	1015	15	370	8.0	23.5	7.9	92	2.4	140	53	41	9.2

DATE	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)
MAR												
16...	7.4	2.2	44	0	36	1.5	30	13	.1	4.9	104	.50
JUN												
28...	15	3.4	106	0	87	1.7	48	27	.1	2.0	198	.40

DATE	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	DISSOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
MAR												
16...	.01	.03	.04	1	10	3	120	3	30	.0	0	7.6
JUN												
28...	.02	.06	.03	2	<10	4	80	8	20	.0	30	2.5

As the number of streams on which discharge and chemical quality data information is likely to be desired far exceeds the number of stations feasible to operate at one time, the Geological Survey collects limited data at sites other than regular stations. When limited data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are useable in low-flow or floodflow analyses, depending on the type data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two parts. Given first are records of discharge measurements and chemical-quality data made at low flow sites followed by a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a second table.

LOW-FLOW PARTIAL-RECORD STATIONS

Measurements of streamflow and chemical quality data in the area covered by this report made at low-flow partial-record stations are given in the following section. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of a stream. The "PERIOD OF RECORD" paragraph shows the water years in which measurements were made at the same, or practically the same, site.

STREAMS TRIBUTARY TO LAKE ERIE

04177230 WEST BRANCH ST. JOSEPH RIVER NEAR PIONEER, OH

LOCATION.--Lat 41°39'14", long 84°34'20", Williams County, Hydrologic Unit 04100003, at bridge on U.S. Highway 20, 0.7 mi (1.1 km) upstream from mouth, and 2 mi (3 km) southwest of Pioneer.

DRAINAGE AREA.--113 mi² (293 km²).

PERIOD OF RECORD.--Discharge, water years 1955 to 1956, 1972 to July 1977 (discontinued); chemical analyses, water years 1972 to June 1977 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUN 09...	1315	57	650	8.1	17.0	8.5	260	71	20	7.8	2.8	269
JULY 07...	1650	20	--	--	--	--	--	--	--	--	--	--
JULY 26...	1335	9.5	--	--	--	--	--	--	--	--	--	--

DATE	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUN 09...	0	45	14	.2	5.9	299	1.2	.04	.16	.07	20	20
JULY 07...	--	--	--	--	--	--	--	--	--	--	--	--
JULY 26...	--	--	--	--	--	--	--	--	--	--	--	--

04177820 FISH CREEK NEAR EDGERTON, OH

LOCATION.--Lat 41°27'59", long 84°46'37", Williams County, Hydrologic Unit 04100003, at bridge on County Road C-60, 2 mi (3 km) northwest of Edgerton, and 2.7 mi (4.3 km) upstream from mouth.

DRAINAGE AREA.--107 mi² (277 km²).

PERIOD OF RECORD.--Discharge, water years 1972 to July 1977 (discontinued); chemical analyses, water years 1972 to June 1977 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUN 09...	1640	20	620	8.2	16.5	9.5	300	79	24	12	2.6	304
JULY 07...	1420	19	--	--	--	--	--	--	--	--	--	--
JULY 26...	1555	6.2	--	--	--	--	--	--	--	--	--	--

DATE	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUN 09...	0	51	17	.3	6.3	342	.48	.02	.02	.06	50	50
JULY 07...	--	--	--	--	--	--	--	--	--	--	--	--
JULY 26...	--	--	--	--	--	--	--	--	--	--	--	--

STREAMS TRIBUTARY TO LAKE ERIE

04188300 BLANCHARD RIVER AT MT. BLANCHARD, OH

LOCATION.--Lat 40°53'28", long 83°33'50", Hancock County, Hydrologic Unit 04100008, at bridge on State Highway 103, 0.6 mi (1.0 km) southwest of Mt. Blanchard, and 0.4 mi (0.6 km) west of intersection with State Highway 37. Prior to water year 1970 at site 1.2 mi (1.9 km) downstream at bridge on Brooklyn Street (drainage area, 112 mi² (290 km²).

DRAINAGE AREA.--109 mi² (282 km²).

PERIOD OF RECORD.--Discharge, water years 1955 to 1956, 1962 to 1967, 1969 to current year; chemical analyses, water years 1966 to June 1977 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUN 13...	1420	8.6	915	8.4	21.0	12.8	350	87	32	32	4.6	198
SEPT 30...	1240	5.7	--	--	--	--	--	--	--	--	--	--

DATE	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUN 13...	6	160	52	.4	5.7	477	9.4	.18	.04	.12	30	20
SEPT 30...	--	--	--	--	--	--	--	--	--	--	--	--

04189180 RILEY CREEK NEAR OTTAWA, OH

LOCATION.--Lat 41°00'00", long 84°00'00", Putnam County, Hydrologic Unit 04100008, at bridge on County Road K-6, 1.2 mi (1.9 km) upstream from mouth, and 3 mi (5 km) southeast of Ottawa.

DRAINAGE AREA.--84.9 mi² (219.9 km²).

PERIOD OF RECORD.--Discharge, water years 1972 to September 1977 (discontinued); chemical analyses, water years 1972 to June 1977 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUN 13...	1915	9.3	1100	7.9	20.0	7.8	430	98	45	60	4.0	257
SEPT 30...	1030	10	--	--	--	--	--	--	--	--	--	--

DATE	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUN 13...	0	200	98	.5	1.7	634	2.2	.04	.11	.23	30	40
SEPT 30...	--	--	--	--	--	--	--	--	--	--	--	--

STREAMS TRIBUTARY TO LAKE ERIE

04191100 FLATROCK CREEK NEAR PAYNE, OH

LOCATION.--Lat 41°05'57", long 84°40'06", Paulding County, Hydrologic Unit 04100007, at bridge on Township Road 71, 2 mi (3 km) downstream from Wildcat Creek, and 3.5 mi (5.6 km) northeast of Payne.

DRAINAGE AREA.--147 mi² (381 km²).

PERIOD OF RECORD.--Discharge, water years 1972 to current year; chemical analyses, water years 1972 to June 1977 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUN 08...	1420	.78	940	8.0	16.5	8.2	340	89	28	48	2.1	269
JULY 27...	1915	2.2	--	--	--	--	--	--	--	--	--	--
SEPT 07...	2000	3.6	--	--	--	--	--	--	--	--	--	--

DATE	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUN 08...	0	100	83	.3	.4	483	.01	.00	.04	.23	40	30
JULY 27...	--	--	--	--	--	--	--	--	--	--	--	--
SEPT 07...	--	--	--	--	--	--	--	--	--	--	--	--

04192600 SOUTH TURKEYFOOT CREEK NEAR MALINTA, OH

LOCATION.--Lat 41°22'15", long 84°01'22", Henry County, Hydrologic Unit 04100009, at bridge on U.S. Highway 6, 1.8 mi (2.9 km) upstream from Little Turkeyfoot Creek, and 3.5 mi (5.6 km) north of Malinta.

DRAINAGE AREA.--121 mi² (131 km²).

PERIOD OF RECORD.--Discharge, water years 1955 to 1956, 1972 to current year; chemical analyses, water years 1972 to 1975, June 1977 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUN 15...	0930	3.3	760	7.8	17.0	7.1	310	88	21	30	3.1	246
JULY 27...	1120	2.2	--	--	--	--	--	--	--	--	--	--
SEPT 07...	1645	3.6	--	--	--	--	--	--	--	--	--	--

DATE	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUN 15...	0	78	51	.2	4.1	397	4.6	.06	.06	.16	20	30
JULY 27...	--	--	--	--	--	--	--	--	--	--	--	--
SEPT 07...	--	--	--	--	--	--	--	--	--	--	--	--

STREAMS TRIBUTARY TO LAKE ERIE

04198020 WEST BRANCH HURON RIVER NEAR MONROEVILLE, OH

LOCATION.--Lat 41°16'46", long 82°40'32", Huron County, Hydrologic Unit 04100012, at bridge on Lamoreaux Road, 2.5 mi (4.0 km) northeast of Monroeville, and 2.5 mi (4.0 km) upstream from mouth.

DRAINAGE AREA.--220 mi^2 (570 km^2).

PERIOD OF RECORD.--Discharge, water years 1960 to current year; chemical analyses, water years 1966 to 1967, 1970 to June 1977 (discontinued).

REVISIONS.--Data reported for this station for water year 1976 was incorrect and should not be used.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUN 16...	1345	14	715	8.6	27.5	14.8	300	78	26	21	4.0	150

DATE	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUN 16...	11	150	35	.2	1.3	401	2.0	.03	.08	.10	40	10

04208900 AURORA BRANCH NEAR CHAGRIN FALLS, OH

LOCATION.--Lat 41°24'40", long 81°24'44", Cuyahoga County, Hydrologic Unit 04110003, at bridge on Solon Road, 1.0 mi (1.6 km) upstream from mouth, and 1.6 mi (2.6 km) southwest of Chagrin Falls.

DRAINAGE AREA.--57.4 mi^2 (148.7 km^2).

PERIOD OF RECORD.--Discharge, water years 1972 to current year; chemical analyses, water year 1972 to July 1977 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	HARDNESS (CA,MG) (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUL 27...	1000	22	455	7.7	18.0	8.9	170	51	11	21	3.0	148

DATE	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SIO2) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED MANGANESE (MN) (UG/L)
JUL 27...	0	47	31	.2	8.6	246	.58	.03	.08	.51	10	20

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1977

					Annual maximum		
Station No.	Station name	Location	Drainage area (mi²)	Period of record	Date	Gage height (feet)	Discharge (ft³/s)
		Streams tributary to Lake Erie					
04176900	Hill Ditch near Richards, OH	Lat 41°39'54", long 83°40'05", Lucas County, Hydrologic Unit 04100001, at culvert on U.S. Highway 20, 1.4 miles west of Richards, 3.4 miles north of intersection of U.S. Highway 20 and State Highway 2.	3.35	1947-77	7- 5-77	12.06	125
04186800	King Run near Harrod, OH	Lat 40°43'56", long 83°53'47", Allen County, Hydrologic Unit 04100007, at culvert on U.S. Highway 30 south, 0.9 mile west of Allen-Hardin County line, 2.2 miles northeast of Harrod.	.53	1966-77	7- 1-77	20.69	98
04189100	Tiderishi Creek near Jenera, OH	Lat 40°55'53", long 83°43'39", Hancock County, Hydrologic Unit 04100008, at culvert on State Highway 698, 2.2 miles north of Jenera.	4.65	1947-77	2-27-77	12.16	100
04190500	Roller Creek at Ohio City, OH	Lat 40°46'16", long 84°38'15", Van Wert County, Hydrologic Unit 04100007, at bridge on county road, 0.8 mile west of Ohio City.	5.18	1947-48≠, 1949-77	2-27-77	7.70	240
04192900	Reitz Run at Waterville, OH	Lat 41°29'50", long 83°42'35", Wood County, Hydrologic Unit 04100009, at culvert on State Highways 64 and 65, 0.1 mile upstream from mouth, 0.5 mile southeast of Waterville.	1.06	1966-77	4-24-77	18.21	30
04196700	St. James [illegible] near Upper Sandusky, OH	Lat 40°46'53", long 83°18'05", Wyandot County, Hydrologic Unit 04100011, 500 ft upstream from bridge on State Highway 67, 3.5 miles southwest of Upper Sandusky.	5.29	1947-77	7- 4-77	11.05	150
04197500	Havens Creek at Havens, OH	Lat 41°17'36", long 83°11'50", Sandusky County, Hydrologic Unit 04100011, at bridge on County Road 12, 0.6 mile southwest of Havens, 1.8 miles upstream from mouth.	4.28	1947-49≠, 1950-77	4-23-77	6.29	145
04198100	Norwalk Creek near Norwalk, OH	Lat 41°13'58", long 82°32'28", Huron County, Hydrologic Unit 04100012, at bridge on county road, 300 feet south of junction of State Highways 601 and 18, 4 miles southeast of Norwalk, 6 miles upstream from mouth.	4.92	1947-77	7- 4-77	16.67	1,380
04199800	Neff Run near Litchfield, OH	Lat 41°12'33", long 82°01'26", Lorain County, Hydrologic Unit 04110001, at culvert on State Highway 83, 0.7 mile north of county line, 2.8 miles north of Litchfield.	.76	1966-77	4-23-77	18.84	61
04200100	Plum Creek at Oberlin, OH	Lat 41°17'15", long 82°13'12", Lorain County, Hydrologic Unit 04110001, at bridge on Professor Street in Oberlin.	4.93	1947-77	7- 4-77	14.05	520
04210090	Montville Ditch at Montville, OH	Lat 41°36'04", long 81°03'03", Geauga County, Hydrologic Unit 04110004, at culvert on State Highway 528, 0.4 mile south of Montville.	.29	1969-77	7-20-77	12.82	95
04210100	Hoskins Creek at Hartsgrove, OH	Lat 41°36'00", long 80°57'12", Ashtabula County, Hydrologic Unit 04110004, at culvert on State Highway 534, 0.4 mile south of Hartsgrove, 4,000 feet downstream from former site.	5.42	1947-77	7-20-77	8.60	330
04212600	Hubbard Run tributary at Ashtabula, OH	Lat 41°50'38", long 80°46'42", Ashtabula County, Hydrologic Unit 04110003, at culvert on Seven Hills Road, 0.5 mile upstream from mouth, 1.6 miles south of center of Ashtabula.	.88	1966-77	7-20-77	17.21	140

≠ Operated at a continuous-record gaging station.

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft³/s)
		STREAMS TRIBUTARY TO LAKE ERIE				
04186000 Miami and Erie Canal	Jennings Creek	Lat 40°61'35", long 84°20'25", on Van Wert-Putnam County Line, Hydrologic Unit 04100007, at bridge on Pohlman Road, 0.9 mi(1.4 km) north of Delphos.	-	1928-33≠, 1934-35, 1945-76	10-07-76	1.2
					12-07-76	.60
					05-24-77	.96
					07-06-77	.64
					09-07-77	2.4
04194000 Swan Creek	Maumee River	Lat 41°37'37", long 83°35'40", Lucas County, Hydrologic Unit 04100009, at bridge on Detroit Avenue in Toledo.	199	1945-48≠, 1974-76	10-13-76	7.8
					11-10-76	9.5
					12-14-76	6.4
					01-20-77	4.5
					02-24-77	116
					03-16-77	119
					04-13-77	103
					05-10-77	189
					06-15-77	38
					07-25-77	11
					09-16-77	94

≠ Operated as a continuous-record gaging station.

AUGLAIZE COUNTY

403403084125700. Local number, AU-11.
LOCATION.--Lat 40°34'03", long 84°12'57", Hydrologic Unit 04100007, 0.2 mi (0.3 km) northwest of fairground in Wapakoneta.
Owner: City of Wapakoneta.
AQUIFER.--Limestone and dolomite of Silurian Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 12 in (0.30 m), depth 268 ft (81.7 m), cased to 111 ft (33.8 m).
PERIOD OF RECORD.--June 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	CHEMICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT										
04...	1100	960	7.2	<10	29	384	0	315	39	160
JUN										
09...	--	924	7.4	8	28	382	0	310	24	150

DATE	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)
OCT										
04...	28	608	.01	.01	.52	.07	10	1700	0	30
JUN										
09...	18	514	.02	.00	.52	.06	30	1800	4	20

405332083421700. Local number, HA-15.

LOCATION.--Lat 40°53'32", long 83°42'17", Hydrologic Unit 04100008, 1.3 mi (2.1 km) southeast of Jenera. Owner: Edgar Wilson.

AQUIFER.--Limestone of Silurian Age.

WELL CHARACTERISTICS.--Drilled test artesian well, diameter 12 in (0.3 m), depth 280 ft (85.3 m), cased to 7 ft (2.1 m).

DATUM.--Land-surface datum is 850 ft (259.080 m) above mean sea level. Measuring point: Floor of instrument shelter 3.00 ft (0.914 m) above land-surface datum.

PERIOD OF RECORD.--October 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 3.47 ft (1.0538 m) Jan. 12, 1977; minimum daily low, 0.15 ft (0.046 m) Sept. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 3.47 ft (1.058 m) Jan. 12; minimum daily low, 0.15 ft (0.046 m) Sept. 19.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.02	3.15	3.31	3.46	3.40	2.10	1.34	1.31	1.66	2.00	2.30	1.97
2	3.03	3.13	3.38	3.46	3.40	2.12	1.25	1.28	1.72	2.06	2.32	1.96
3	3.06	3.10	3.36	3.41	3.32	2.07	1.03	1.28	1.77	2.07	2.36	1.34
4	3.07	3.14	3.37	3.41	3.29	1.82	1.00	1.21	1.78	2.06	2.39	1.36
5	3.07	3.15	3.38	3.43	3.22	1.87	1.12	0.84	1.76	2.05	2.37	1.42
6	3.09	3.15	3.32	3.43	3.23	1.89	1.21	0.90	1.78	2.06	2.34	1.47
7	3.09	3.19	3.29	3.45	3.23	1.91	1.18	0.98	1.79	2.07	2.28	1.50
8	3.08	3.20	3.35	3.45	3.23	1.91	1.25	1.02	1.79	2.01	2.30	1.52
9	3.05	3.12	3.36	3.46	3.36	1.89	1.24	1.05	1.80	2.07	2.32	1.54
10	3.10	3.18	3.35	3.40	3.37	1.93	1.22	1.08	1.82	2.09	2.28	1.62
11	3.11	3.23	3.37	3.44	3.35	1.95	1.26	1.12	1.81	2.09	2.29	1.65
12	3.11	3.25	3.32	3.47	3.25	1.91	1.28	1.14	1.81	2.10	1.98	1.65
13	3.09	3.25	3.38	3.44	3.07	1.79	1.26	1.14	1.83	2.16	1.99	1.60
14	3.10	3.22	3.34	3.35	3.06	1.83	1.29	1.18	1.86	2.18	2.06	1.23
15	3.14	3.22	3.30	3.38	3.07	1.85	1.31	1.21	1.88	2.20	2.07	1.24
16	3.19	3.25	3.30	3.43	3.05	1.90	1.33	1.24	1.87	2.23	2.04	1.15
17	3.22	3.21	3.37	3.39	3.03	1.90	1.34	1.26	1.86	2.25	2.10	0.18
18	3.25	3.21	3.37	3.37	2.99	1.65	1.35	1.28	1.86	2.27	2.11	0.30
19	3.19	3.22	3.32	3.37	3.00	1.53	1.37	1.31	1.90	2.30	2.13	0.15
20	3.12	3.21	3.32	3.40	2.99	1.57	1.39	1.33	1.95	2.34	2.13	0.46
21	3.14	3.24	3.39	3.42	3.01	1.57	1.40	1.37	2.00	2.34	2.12	0.70
22	3.20	3.30	3.38	3.46	2.95	1.44	1.40	1.40	2.02	2.23	1.87	0.83
23	3.21	3.30	3.40	3.46	2.70	1.41	1.32	1.43	2.04	2.24	1.88	0.91
24	3.12	3.28	3.41	3.38	2.12	1.40	1.27	1.45	2.04	2.23	1.95	0.96
25	3.13	3.26	3.33	3.36	2.16	1.41	1.24	1.46	2.05	2.18	1.98	0.99
26	3.20	3.21	3.34	3.36	2.21	1.43	1.26	1.48	2.09	2.15	1.97	1.06
27	3.21	3.28	3.35	3.33	1.96	1.41	1.26	1.49	2.11	2.18	2.01	1.12
28	3.22	3.28	3.32	3.34	2.03	1.21	1.31	1.51	2.11	2.19	2.03	1.16
29	3.18	3.32	3.37	3.31	---	1.19	1.33	1.60	2.12	2.19	2.04	1.16
30	3.15	3.33	3.38	3.34	---	1.24	1.32	1.64	2.11	2.22	1.92	1.16
31	3.14	---	3.40	3.34	---	1.34	---	1.62	---	2.25	1.94	---
MAX	3.25	3.33	3.41	3.47	3.40	2.12	1.40	1.64	2.12	2.34	2.39	1.97

412123083574000. Local number, HY-2.

LOCATION.--Lat 41°21'23", long 83°57'40", Hydrologic Unit 04100009, 1.4 mi (2.3 km) southwest of McClure. Owner: State of Ohio.

AQUIFER.--Limestone of Silurian Age.

WELL CHARACTERISTICS.--Drilled test artesian well, diameter 12 in (0.3 m), depth 300 ft (91.4 m), cased to 43 ft (13.1 m).

DATUM.--Land-surface datum is 680 ft (207.264 m) above mean sea level. Measuring point: Floor of instrument shelter 3.00 ft (0.914 m) above land-surface datum.

PERIOD OF RECORD.--June 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 22.60 ft (6.888 m) Feb. 7, 1975; minimum daily low, 17.88 ft (5.450 m) Mar. 9, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 22.76 ft (6.937 m) May 30; minimum daily low, 19.35 ft (5.898 m) Sept. 25.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.03	20.26	20.50	20.90	21.47	20.45	20.62	20.20	22.59	22.33	21.44	20.71
2	20.06	20.18	21.06	20.94	21.40	20.47	20.35	20.16	22.66	22.23	21.64	20.68
3	20.27	20.02	21.12	20.90	21.21	20.36	20.62	20.42	22.67	22.07	21.74	20.78
4	20.27	20.21	21.05	20.99	21.14	20.13	20.34	20.54	22.66	21.88	21.89	20.76
5	20.26	20.21	21.11	21.24	21.13	19.99	20.51	20.76	22.56	21.71	22.08	20.82
6	20.06	20.28	20.91	21.09	21.39	19.96	21.16	21.09	22.53	21.59	22.22	20.74
7	19.99	20.06	20.87	21.02	21.15	20.00	21.27	21.49	22.59	21.20	22.25	20.75
8	19.88	19.89	20.92	21.05	21.09	20.00	21.56	21.59	22.50	21.15	22.28	20.74
9	19.53	19.80	20.87	21.06	20.92	19.93	21.64	21.61	22.58	21.26	22.01	20.64
10	19.51	20.09	20.66	20.90	21.02	20.05	21.77	21.79	22.69	21.37	21.12	21.11
11	19.54	20.32	20.75	21.11	20.93	20.17	21.71	21.33	22.63	21.41	21.02	20.92
12	19.66	20.47	20.57	21.26	20.83	20.25	21.68	21.32	22.64	21.31	20.78	20.80
13	19.77	20.66	20.75	21.24	20.58	20.48	21.51	21.20	22.61	21.40	20.55	20.64
14	19.86	20.52	20.69	21.08	20.68	20.72	21.57	21.06	22.35	21.48	20.57	20.58
15	19.93	20.60	20.43	21.13	20.93	20.77	21.59	20.84	21.91	21.47	20.48	20.54
16	20.04	20.66	20.13	21.25	21.25	21.01	21.61	20.67	21.67	21.76	20.54	20.21
17	20.00	20.59	20.25	21.18	21.32	20.98	21.58	20.76	21.55	21.94	20.74	19.98
18	19.97	20.43	20.54	21.16	21.46	20.90	21.52	20.93	21.67	22.18	20.91	19.77
19	20.05	20.51	20.31	21.16	21.15	21.10	21.55	21.20	21.47	22.10	20.92	19.61
20	20.08	20.52	20.46	21.27	20.95	21.05	21.56	21.59	21.46	22.03	20.93	19.61
21	19.92	20.49	20.57	21.41	20.84	21.08	21.55	21.94	21.82	22.19	20.93	19.60
22	19.97	20.63	20.47	21.62	20.46	21.09	21.50	22.14	21.99	22.10	20.72	19.58
23	19.93	20.69	20.79	21.52	20.28	21.15	21.23	22.32	22.19	21.92	20.51	19.49
24	19.66	20.68	20.82	21.32	20.10	21.25	20.67	22.42	22.30	21.57	20.35	19.41
25	19.51	20.63	20.69	21.23	20.27	21.25	20.41	22.56	22.32	21.44	20.32	19.35
26	19.48	20.50	20.6[illegible]	21.16	20.55	21.37	20.36	22.56	22.50	21.57	20.16	19.38
27	19.63	20.29	20.75	21.19	20.33	21.18	20.17	22.58	22.46	21.53	20.07	19.67
28	19.76	20.15	20.67	21.27	20.32	20.92	20.18	22.73	22.42	21.51	20.17	19.88
29	19.88	20.09	20.[illegible]	21.33	---	20.77	20.22	22.70	22.47	21.40	20.33	19.94
30	20.02	20.36	20.62	21.43	---	20.62	20.33	22.76	22.48	21.45	20.47	19.95
31	20.11	---	20.66	21.39	---	20.67	---	22.72	---	21.32	20.57	---
MAX	20.27	20.69	21.12	21.62	21.47	21.37	21.77	22.76	22.69	22.33	22.28	21.11

LORAIN COUNTY

411545082072400. Local number, LN-1.

LOCATION.--Lat 41°15'45", long 82°07'24", Hydrologic Unit 04110001, 1.7 mi (2.7 km) north of LaGrange. Owner: LaGrange Water Department.

AQUIFER.--Sandstone of Mississippian Age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 6 in (0.15 m), depth 47 ft (14.3 m), cased.

DATUM.--Land-surface datum is 795 ft (242.316 m) above mean sea level. Measuring point: Floor of instrument shelter 1.50 ft (0.457 m) above land-surface datum.

PERIOD OF RECORD.--September 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 35.60 ft (10.851 m) Oct. 25, 1952; minimum daily low, 0.13 ft (0.040 m) Jan. 8, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 6.69 ft (2.039 m) Feb. 7; minimum daily low, 1.36 ft (0.415 m) Apr. 5.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.55	6.03	6.17	6.31	6.40	4.00	2.02	1.97	3.02		---	5.59
2	5.58	6.00	6.26	6.40	6.40	4.05	1.78	1.93	3.13		---	5.60
3	5.67	5.68	6.27	6.25	6.22	3.94	1.93	2.01	3.39		---	5.70
4	5.76	5.66	6.24	6.15	6.00	3.61	1.77	1.85	3.54		---	5.68
5	5.72	5.68	6.35	6.19	6.32	3.52	1.36	1.56	3.55		---	5.71
6	5.73	5.68	6.22	6.19	6.58	3.54	1.90	1.48	3.39		---	5.89
7	5.90	5.72	5.90	6.17	6.69	3.43	1.95	1.63	3.32		---	5.93
8	5.87	5.83	6.13	6.19	6.66	3.38	2.09	1.63	3.35		5.13	5.98
9	5.65	5.72	6.32	6.23	6.38	3.19	2.07	1.67	3.30		5.19	5.93
10	5.92	5.62	6.09	5.95	6.38	3.15	1.92	1.74	3.59		5.15	6.23
11	6.01	5.85	6.24	6.40	6.27	3.24	1.89	1.86	3.68		5.21	6.34
12	5.97	5.99	5.91	6.40	6.24	3.14	1.99	1.93	3.68		5.22	6.36
13	5.72	6.03	6.28	6.40	5.66	2.72	1.92	1.86	---		5.18	6.16
14	5.78	5.91	6.24	6.07	5.68	2.84	1.97	1.99	---		5.17	6.40
15	5.81	5.75	5.92	6.04	5.82	2.82	2.06	2.19	---		5.24	6.40
16	6.12	5.94	5.71	6.26	5.80	2.70	2.16	2.32	---		5.14	6.40
17	6.22	5.91	5.98	6.26	5.65	2.71	2.16	2.35	---		5.13	6.40
18	6.32	5.60	6.18	6.09	5.40	2.36	2.19	2.36	---		5.23	6.23
19	6.22	5.62	6.01	6.06	5.29	2.55	2.25	2.50	---		5.21	6.06
20	6.01	5.64	5.72	6.18	5.29	2.35	2.37	2.58	---		5.24	6.12
21	5.87	5.60	6.15	6.27	5.34	2.42	2.46	2.65	---		5.14	6.15
22	6.17	5.90	6.15	6.55	5.12	2.11	2.47	2.72	---		5.12	6.12
23	6.24	6.00	6.07	6.54	5.14	2.17	2.44	2.87	---		5.16	5.94
24	6.02	5.97	6.19	6.18	4.41	2.22	2.23	2.91	---		5.37	5.74
25	5.90	5.86	5.89	5.94	4.44	2.17	1.95	2.89	---		5.45	5.73
26	6.15	5.64	5.75	5.92	4.48	2.12	1.84	2.89	---		5.36	5.65
27	6.28	5.89	5.83	5.94	4.14	2.00	1.80	2.89	---		5.40	5.81
28	6.28	5.93	5.60	6.11	4.16	1.67	1.89	2.83	---		5.46	5.93
29	6.09	6.07	5.94	6.12	---	1.62	2.08	3.03	---		5.50	5.95
30	5.95	6.17	5.96	6.26	---	1.63	2.05	3.19	---		5.54	5.87
31	5.95	---	6.05	6.25	---	1.92	---	3.19	---		5.54	---
MAX	6.32	6.17	6.35	6.55	6.69	4.05	2.47	3.19	---		---	6.40

LUCAS COUNTY

413704083362200. Local number, LU-1.

LOCATION.--Lat 41°37'04", long 83°36'22", Hydrologic Unit 04100001, at Toledo State Hospital.
Owner: State of Ohio.

AQUIFER.--Limestone of Silurian Age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 12 in (0.3 m), depth 525 ft (160.0 m), cased.

DATUM.--Land-surface datum is 624 ft (190.195 m) above mean sea level. Measuring point: Floor of instrument shelter 3.10 ft (0.945 m) above land-surface datum.

PERIOD OF RECORD.--March 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 117.25 ft (35.738 m) Sept. 18, 1957; minimum daily low, 77.63 ft (23.662 m) May 5, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 81.03 ft (24.698 m) Sept. 11; minimum daily low, 77.63 ft (23.662 m) May 5.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80.85	80.28	79.64	79.19	78.81	78.54	78.30	78.10	79.99	79.00	79.84	80.79
2	80.83	80.21	79.83	79.28	78.80	78.62	77.76	78.08	80.22	79.27	79.87	80.76
3	80.87	79.89	79.83	79.10	78.38	78.48	78.24	78.17	80.37	79.28	79.99	80.89
4	80.86	79.89	79.74	79.01	78.21	78.01	77.93	77.94	80.30	79.12	80.09	80.81
5	80.75	79.94	79.86	79.04	78.66	78.36	77.70	77.63	80.03	79.08	80.17	80.81
6	80.83	79.88	79.64	79.01	78.92	78.38	78.27	77.82	79.77	78.97	80.22	80.94
7	80.92	79.98	79.35	78.96	79.04	78.44	78.24	77.97	79.80	78.77	80.25	80.95
8	80.85	80.07	79.62	78.96	78.99	78.42	78.54	77.95	79.65	78.91	80.36	80.98
9	80.53	79.75	79.73	79.04	78.61	78.22	78.53	78.01	79.75	79.04	80.43	80.78
10	80.71	79.71	79.57	78.71	78.66	78.34	78.31	77.95	79.90	79.08	80.38	81.00
11	80.78	79.96	79.68	79.09	78.57	78.41	78.29	78.02	79.77	79.00	80.41	81.03
12	80.71	80.09	79.33	79.28	78.49	78.15	78.36	78.04	79.54	78.77	80.41	80.91
13	80.38	80.14	79.71	79.27	78.14	77.96	78.21	77.86	79.63	78.93	80.23	80.48
14	80.41	79.96	79.49	78.70	78.38	78.15	78.23	78.05	79.59	78.98	80.51	80.74
15	80.34	79.79	79.17	78.69	78.61	78.10	78.25	78.34	79.63	78.88	80.61	80.74
16	80.60	79.95	78.93	78.92	78.64	78.23	78.26	78.51	79.59	78.90	80.53	80.54
17	80.71	79.87	79.20	78.89	78.57	78.28	78.18	78.58	79.50	78.75	80.60	80.45
18	80.83	79.53	79.34	78.65	78.30	77.99	78.11	78.59	79.42	78.74	80.71	80.20
19	80.62	79.45	79.08	78.59	78.30	78.18	78.09	78.82	79.57	78.67	80.69	79.97
20	80.34	79.46	78.85	78.66	78.33	78.24	78.15	78.92	79.55	78.72	80.65	80.25
21	80.15	79.35	79.23	78.83	78.39	78.26	78.18	79.09	79.75	78.99	80.48	80.40
22	80.46	79.61	79.22	79.09	78.14	78.21	78.15	79.28	79.78	79.20	80.29	80.43
23	80.51	79.68	79.18	79.02	78.14	78.31	78.07	79.50	79.74	79.24	80.28	80.23
24	80.17	79.64	79.24	78.62	77.73	78.46	77.92	79.64	79.57	79.12	80.44	80.02
25	80.15	79.44	78.83	78.32	78.15	78.45	77.75	79.71	79.35	79.43	80.65	80.07
26	80.46	79.12	78.77	78.01	78.29	78.45	77.78	79.78	79.33	79.60	80.59	80.07
27	80.59	79.45	78.81	78.17	78.31	78.22	77.78	79.78	79.28	79.70	80.46	80.19
28	80.57	79.49	78.45	78.35	78.33	77.75	78.12	79.72	79.16	79.59	80.55	80.27
29	80.33	79.58	78.76	78.32	---	77.85	78.23	80.06	79.08	79.42	80.65	80.26
30	80.16	79.68	78.81	78.48	---	77.79	78.22	80.25	79.14	79.52	80.72	80.10
31	80.21	---	78.89	78.42	---	78.26	---	80.25	---	79.56	80.73	---
MAX	80.92	80.28	79.86	79.28	79.04	78.62	78.54	80.25	80.37	79.70	80.73	81.03

MEDINA COUNTY

410040081424900. Local number, MD-10.

LOCATION.--Lat 41°00'40", long 81°42'49", Hydrologic Unit 05040001, 1.4 mi (2.3 km) southeast of city hall in Wadsworth.

Owner: Wadsworth Water Department.

AQUIFER.--Sandstone of Pennsylvanian Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 in (0.41 m) depth 227 ft (69.2 m), cased to 47 ft (14.3 m).

PERIOD OF RECORD.--May 1967 to May 1975, May to September 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	CHEM-ICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)
MAY										
12...	278	6.7	30	2.9	96	0	79	31	49	1.9

DATE	TOTAL RESI-DUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO-GEN (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL CHRO-MIUM (CR) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN-GANESE (MN) (UG/L)
MAY									
12...	156	.00	.00	.05	.03	<10	7000	0	780

411914083045300. Local number, S-3.

LOCATION.--Lat 41°19'14", long 83°04'53", Hydrologic Unit 04100011, 2.6 mi (4.2 km) southeast of Fremont Post Office.

Owner: State of Ohio.

AQUIFER.--Limestone of Silurian Age.

WELL CHARACTERISTICS.--Drilled test artesian well, diameter 12 in (0.30 m), depth 121 ft (36.9 m), cased to 93 ft (28.3 m).

DATUM.--Land-surface datum is 627 ft (191.110 m) above mean sea level. Measuring point: Floor of instrument shelter 3.00 ft (0.914 m) above land-surface datum.

PERIOD OF RECORD.--December 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 24.18 ft (7.370 m) Aug. 2, 1975; minimum daily low, 14.02 ft (4.273 m) Mar. 24, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum recorded daily low, 23.29 ft (7.099 m) Aug. 2; minimum recorded daily low, 15.07 ft (4.593 m) May 5.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	15.94	16.31	16.48	16.04	15.74	15.50	21.27	21.19	23.06	18.33
2		---	16.04	16.34	16.48	16.07	15.43	15.49	22.18	20.42	23.29	18.29
3		---	16.02	16.29	16.26	15.97	15.68	15.47	21.80	20.07	22.09	18.28
4		---	16.04	16.26	16.12	15.68	15.49	15.13	20.38	19.67	21.35	18.19
5		---	16.07	16.31	16.32	15.89	15.33	15.07	19.68	19.38	21.01	18.12
6		---	16.02	16.32	16.42	15.90	15.61	15.17	20.10	19.19	20.75	18.16
7		---	15.88	16.32	16.53	15.94	15.58	15.39	21.37	19.02	20.50	18.23
8		---	16.05	16.38	16.48	15.91	15.73	15.31	21.63	18.97	20.37	18.20
9		---	16.12	16.44	16.25	15.79	15.70	15.38	20.19	18.97	20.32	18.06
10		---	15.95	16.23	16.24	15.83	15.57	15.40	19.58	18.93	19.97	18.13
11		---	16.08	16.48	16.18	15.88	15.63	15.46	19.21	18.79	19.78	18.16
12		16.01	15.87	16.55	16.10	15.72	15.81	15.51	18.81	18.79	19.57	19.42
13		16.10	16.09	16.53	15.97	15.63	15.67	15.47	18.66	18.97	19.36	20.03
14		15.93	16.01	16.21	16.11	15.76	15.68	15.60	18.49	19.02	19.19	19.10
15		15.94	15.84	16.23	16.21	15.68	15.66	15.73	18.40	19.00	19.18	18.83
16		16.04	15.73	16.42	16.19	15.80	15.67	15.93	18.24	19.07	19.05	18.47
17		16.00	15.87	16.39	16.15	15.81	15.61	16.27	18.31	18.97	18.8[illegible]	18.23
18		15.79	15.95	16.34	15.98	15.53	15.58	16.59	18.14	18.99	19.85	18.07
19		15.81	15.88	16.35	15.96	15.70	15.61	16.86	18.06	18.94	21.03	17.90
20		15.83	15.81	16.41	15.98	15.72	15.63	18.74	18.[illegible]0	19.05	20.30	17.86
21		15.79	16.04	16.44	16.01	15.74	15.63	20.01	18.52	19.06	19.71	17.92
22		15.94	16.05	16.58	15.86	15.62	15.58	19.44	19.95	19.14	19.23	17.87
23		15.98	16.02	16.59	15.79	15.66	15.44	18.50	21.46	19.14	19.01	17.73
24		15.96	16.10	16.35	15.66	15.74	15.34	18.18	22.12	20.56	18.89	17.62
25		15.87	15.93	16.20	15.82	15.70	15.31	17.95	21.25	22.04	18.86	17.61
26		15.71	15.87	16.17	15.94	15.73	15.30	17.85	20.37	22.33	18.67	17.51
27		15.84	15.91	16.11	15.91	15.61	15.30	17.82	19.74	20.76	18.60	17.57
28		15.87	15.82	16.19	15.96	15.32	15.41	17.91	20.56	19.93	18.58	17.59
29		15.94	16.02	16.19	---	15.41	15.50	19.56	21.86	19.39	18.55	17.60
30		15.96	16.03	16.30	---	15.44	15.53	19.20	22.39	20.67	18.50	17.49
31		---	16.13	16.27	---	15.68	---	19.73	---	21.99	18.38	---
MAX		---	16.13	16.59	16.53	16.07	15.81	20.01	22.39	22.33	23.29	20.03

WILLIAMS COUNTY

412853084322000. Local number, WB-10.
LOCATION.--Lat 41°28'53", long 84°32'20", Hydrologic Unit 04100006, 0.9 mi (1.4 km) northeast of city hall in Bryan.
Owner: City of Bryan.
AQUIFER.--Sand and gravel of Pleistocene Age.
WELL CHARACTERISTICS.--Drilled public supply artesian well, 12 in (0.30 m), depth 147 ft (44.8 m), screened below 115 ft (35.1 m).
PERIOD OF RECORD.--1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	CHEMICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	ALKALINITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)
OCT										
04...	0900	683	7.5	<10	28	392	0	322	20	31
JUN										
14...	--	679	7.6	4	28	388	0	320	16	31

DATE	DISSOLVED CHLORIDE (CL) (MG/L)	TOTAL RESIDUE (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL AMMONIA NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)
OCT										
04...	10	372	.01	.00	.42	.10	<10	620	1	20
JUN										
14...	10	308	.00	.00	.44	.03	<10	560	0	30

413108084415300. Local number, WM-12.

LOCATION.--Lat 41°31'08", long 84°41'53", Hydrologic Unit 04100003, 1.7 mi (2.7 km) east of Blakeslee. Owner: State of Ohio.

AQUIFER.--Sand and gravel of Pleistocene Age.

WELL CHARACTERISTICS.--Drilled test artesian well, diameter 10 in (0.25 m), depth 115 ft (35.1 m), cased to 115 ft (35.1 m), screened 85 ft to 115 ft (25.9 m to 35.1 m).

DATUM.--Land-surface datum is 830 ft (252.984 m) above mean sea level. Measuring point: Floor of instrument shelter 1.50 ft (0.457 m) above land-surface datum.

PERIOD OF RECORD.--1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily low, 10.56 ft (3.219 m) Feb. 6-7, 1977; minimum daily low, 6.34 ft (1.932 m) May 9, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum daily low, 10.56 ft (3.219 m) Feb. 6-7; minimum daily low, 6.97 ft (2.142 m) Apr. 2.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.33	10.29	10.33	10.51	10.53	9.13	7.14	8.16	9.59	9.77	10.45	10.25
2	10.35	10.24	10.40	10.51	10.53	9.13	6.97	8.17	9.70	9.71	10.44	10.22
3	10.39	10.16	10.38	10.40	10.32	9.05	7.15	7.90	9.80	9.72	10.44	10.24
4	10.39	10.23	10.37	10.41	10.35	8.70	7.05	7.74	9.79	9.78	10.48	10.20
5	10.35	10.25	10.39	10.44	10.53	8.10	7.00	7.61	9.70	9.81	10.47	10.23
6	10.36	10.23	10.31	10.42	10.56	7.88	7.28	7.70	9.75	9.78	10.38	10.27
7	10.38	10.30	10.29	10.45	10.56	7.46	7.30	7.78	9.77	9.85	10.33	10.29
8	10.32	10.31	10.39	10.45	10.51	7.29	7.50	7.74	9.71	9.95	10.33	10.31
9	10.25	10.18	10.40	10.48	10.38	7.46	7.60	7.94	9.84	10.04	10.19	10.26
10	10.31	10.27	10.37	10.43	10.42	7.69	7.70	8.09	9.83	10.06	10.17	10.38
11	10.34	10.34	10.42	10.55	10.42	7.76	7.90	8.28	9.75	10.01	10.20	10.41
12	10.30	10.38	10.33	10.55	10.37	7.73	8.00	8.38	9.77	10.01	10.09	10.37
13	10.27	10.38	10.46	10.52	10.32	7.81	8.10	8.40	9.81	10.11	10.06	10.25
14	10.30	10.30	10.37	10.32	10.41	7.94	8.30	8.54	9.84	10.16	10.19	10.31
15	10.33	10.30	10.29	10.39	10.45	8.03	8.40	8.70	9.87	10.16	10.25	10.31
16	10.42	10.36	10.27	10.48	10.44	8.21	8.48	8.80	9.81	10.16	10.21	10.15
17	10.43	10.32	10.41	10.45	10.38	8.27	8.57	8.84	9.80	10.11	9.80	10.13
18	10.46	10.27	10.44	10.39	10.31	8.35	8.69	8.90	9.84	10.11	9.86	10.07
19	10.35	10.32	10.32	10.36	10.36	8.45	8.80	8.98	9.90	10.13	9.90	9.83
20	10.26	10.31	10.34	10.41	10.37	8.41	8.90	9.02	9.96	10.18	9.94	9.87
21	10.28	10.33	10.44	10.49	10.39	8.40	8.95	9.09	10.01	10.20	9.90	9.91
22	10.38	10.42	10.41	10.54	10.30	8.19	8.97	9.15	10.04	10.29	9.95	9.94
23	10.38	10.43	10.45	10.48	10.29	8.17	8.73	9.24	10.06	10.28	9.99	9.92
24	10.26	10.38	10.45	10.33	9.90	8.19	7.90	9.29	10.00	10.21	10.12	9.89
25	10.30	10.32	10.30	10.32	9.62	8.16	7.55	9.30	9.96	10.33	10.16	9.92
26	10.37	10.24	10.34	10.31	9.58	8.15	7.41	9.33	9.98	10.37	10.11	9.81
27	10.38	10.38	10.35	10.34	9.33	8.07	7.44	9.34	10.00	10.38	10.16	9.71
28	10.35	10.37	10.31	10.43	9.28	7.81	7.76	9.35	10.00	10.35	10.21	9.75
29	10.24	10.35	10.40	10.39	---	7.30	7.88	9.50	10.09	10.32	10.21	9.75
30	10.19	10.35	10.41	10.44	---	7.01	8.01	9.58	10.09	10.35	10.22	9.72
31	10.28	---	10.44	10.41	---	7.12	---	9.58	---	10.35	10.21	---
MAX	10.46	10.43	10.46	10.55	10.56	9.13	8.97	9.58	10.09	10.38	10.48	10.41

The following table lists the lakes at which chemical and physical characteristics and biological indices were obtained during water year 1977. These lakes were sampled to evaluate current conditions and existing or potential problems, determine chemical and physical characteristics of inflow from major tributaries, and provide basic information for determining the necessity for more intensive studies where problems exist. The results of these studies may be obtained by writing to the District Chief, WRD, 975 West Third Avenue, Columbus, Ohio, 43212. The complete study will be available in a separate report to be published in the near future.

413016081054200	East Branch Reservoir	Geauga County
404202083225800	Killdeer Reservoir	Wyandot County

INDEX

Page

Accuracy of field data and computed results..... 9
Acre-foot, definition of........................ 2
Akron, Little Cuyahoga River below Ohio Canal at 132-133
Allentown, Ottawa River at...................... 42-46
Antwerp, Maumee River at........................ 18-19
Aquifer, definition of.......................... 2
Artesian, definition of......................... 2
Ash mass, definition of......................... 3
Ashtabula, Ashtabula River at................... 186-190
  Ashtabula River near.......................... 185
Ashtabula River, at Ashtabula................... 186-190
  near Ashtabula................................ 185
Auglaize River, at Cloverdale................... 48-52
  near Defiance................................. 60-61
  near Fort Jennings............................ 36-41
Aurora Branch near Chagrin Falls................ 198

Bacteria, definition of......................... 2
Bean Creek at Powers............................ 26-27
Bed material, definition of..................... 3
Bedford, Tinkers Creek at....................... 144-149
Berea, Rocky River near......................... 124-126
Bettsville, East Branch Wolf Creek near......... 98-99
  Wolf Creek at................................. 96-97
Big Creek at Cleveland.......................... 166-167
Biochemical oxygen demand, definition of........ 3
Biomass, definition of.......................... 3
Black River, at Elyria.......................... 118
  below Elyria.................................. 119-123
Blanchard River, at Mt. Blanchard............... 196
  near Findlay.................................. 54-59
Bottom material (See bed material).............. 3
Broken Sword Creek at Nevada.................... 82-83
Bucyrus, Sandusky River near.................... 80-81

Cella/volume, definition of..................... 3
Cfs-day, definition of.......................... 3
Chagrin River at Willoughby..................... 176-178
Chemical characteristics and biological indices
    of selected lakes........................... 210
Chemical oxygen demand, definition of........... 3
Chlorophyll, definition of...................... 3
Cleveland, Big Creek at......................... 166-167
  Cuyahoga River at West Third Street bridge in. 168-172
Cloverdale, Auglaize River at................... 48-52
Collection and computation of data.............. 7-9
Collection and examination of data.............. 10
Collection of the data.......................... 11
Conneaut, Conneaut Creek at..................... 192-193
Conneaut Creek at Conneaut...................... 192-193
Contents, definition of......................... 3
Control, definition of.......................... 3
Control structure, definition of................ 3
Cooperation..................................... 1-2
Crawford, Tymochtee Creek at.................... 90-91
Cubic feet per second per square mile,
    definition of............................... 3
Cubic foot per second, definition of............ 3
Cuyahoga River, at Hiram Rapids................. 128-129
  at Independence............................... 156-165
  at Ira.. 142-143
  at Old Portage................................ 134-140
  at West Third Street bridge, Cleveland........ 168-172

Defiance, Auglaize River near................... 60-61
  Maumee River at............................... 20-24
Definition of terms............................. 2-6
Discharge, definition of........................ 3
Discharge measurements at miscellaneous sites... 200
Dissolved, definition of........................ 3
Downstream order and station number............. 6
Drainage area, definition of.................... 3
Drainage basin, definition of................... 4

Elyria, Black River at.......................... 118
  Black River below............................. 119-123
Euclid Creek near Euclid........................ 174-175
Euclid, Euclid Creek near....................... 174-175
Evansport, Tiffin River at...................... 30-34

Page

Explanation of ground-water level records...... 11
  of stage and water-discharge records.......... 7-10
  of water-quality records...................... 10-11

Factors for converting English units to
    International System (SI) units..Inside back cover
Fecal-coliform bacteria, definition of.......... 2
Fecal-streptococcal bacteria, definition of..... 2-3
Findlay, Blanchard River near................... 54-59
Fish Creek near Edgerton........................ 195
Flatrock Creek near Payne....................... 197
Fort Jennings, Auglaize River near.............. 36-41
Fremont, Sandusky River below................... 101-105
  Sandusky River near........................... 100

Gage height, definition of...................... 4
Gaging station, definition of................... 4
Grand River, at Painesville..................... 180-184
  near Painesville.............................. 179
Ground-water records............................ 201-209

Hardness, definition of......................... 4
Havens Creek at Havens.......................... 199
Hill Ditch near Richards........................ 199
Hiram Rapids, Cuyahoga River at................. 128-129
Honey Creek at Melmore.......................... 94-95
Hoskins Creek at Hartsgrove..................... 199
Hubbard Run tributary at Ashtabula.............. 199
Huron River, at Milan........................... 106
  below Milan................................... 107-111
  West Branch, near Monroeville................. 198
Hydrologic conditions........................... 2
Hydrologic-data stations, in downstream order,
    for which records are published............. VI
Hydrologic unit, definition of.................. 4

Independence, Cuyahoga River at................. 156-165
  Ohio Canal at................................. 154-155
  Tinkers Creek near............................ 150-152
Instantaneous discharge, explanation of......... 3
Introduction.................................... 1
Ira, Cuyahoga River at.......................... 142-143

King Run near Harrod............................ 199

Lakes, chemical characteristics and biological
    indices of selected......................... 210
List of hydrologic-data stations in downstream
    order, for which records are published.... VI
Little Cuyahoga River, at Mogadore.............. 130-131
  below Ohio Canal, at Akron.................... 132-133

Maumee River, at Antwerp........................ 18-19
  at Defiance................................... 20-24
  at Waterville................................. 68-72
  near Waterville............................... 62-66
Mean concentration, definition of............... 5
Mean discharge, definition of................... 3
Melmore, Honey Creek at......................... 94-95
Methylene blue active substance, definition of.. 4
Mexico, Sandusky River near..................... 92-93
Micrograms per gram, definition of.............. 4
Micrograms per kilogram, definition of.......... 4
Micrograms per litor, definition of............. 4
Milan, Huran River at........................... 106
  Huron River below............................. 107-111
Milligrams per liter, definition of............. 4
Miscellaneous sites, discharge measurements at.. 200
Mogadore, Little Cuyahoga River at.............. 130-131
Montville Ditch at Montville.................... 199

National stream-quality accounting network,
    explanation of.............................. 7
Neff Run near Litchfield........................ 199
Nevada, Broken Sword Creek at................... 82-83
Norwalk Creek near Norwalk...................... 199
Numbering system for wells and miscellaneous
    sites....................................... 6

Page
Ohio Canal at Independence........................ 154-155
Old Portage, Cuyahoga River at.................... 134-140
Organism, definition of........................... 4
  count/area, definition of....................... 4
  count/volume, definition of..................... 4
Other data available.............................. 9-10
Ottawa River (tributary to Auglaize River)
      at Allentown................................ 42-46
Ottawa River (tributary to Lake Erie) at
      Toledo University at Toledo................. 16-17

Painesville, Grand River at....................... 180-184
  Grand River near................................ 179
Partial-record station, definition of............. 4
Particle size, definition of...................... 4
Particle size classification, definition of....... 4-5
Percent composition, definition of................ 5
Periphyton, definition of......................... 5
Pesticides, definition of......................... 5
Pesticides program................................ 7
Phytoplankton, definition of...................... 5
Picocurie, definition of.......................... 5
Plankton, definition of........................... 5
Plum Creek at Oberlin............................. 199
Portage River, at railroad bridge at Woodville.... 74-78
  at Woodville.................................... 73
Powers, Bean Creek at............................. 26-27
Preface... III
Publications on techniques of water-resources
      investigations.............................. 12

Records of discharge collected by agencies other
      than the Geological Survey.................. 10-11
Reitz Run at Waterville........................... 199
Riley Creek near Ottawa........................... 196
Rocky River near Berea............................ 124-126
Roller Creek at Ohio City......................... 199
Runoff in inches, definition of................... 5

St. James Run near Upper Sandusky................. 199
St. Joseph River, West Branch near Pioneer........ 195
Sandusky River, below Fremont..................... 101-105
  near Bucyrus.................................... 80-81
  near Fremont.................................... 100
  near Mexico..................................... 92-93
  near Upper Sandusky............................. 84-89
Sediment.. 10-11

Page
Sediment, definition of........................... 5
Solute, definition of............................. 5
South Turkey foot Creek near Malinta.............. 197
Special networks and programs..................... 7
Specific conductance, definition of............... 5
Stage-discharge relation, definition of........... 6
Streamflow, definition of......................... 6
Stryker, Tiffin River at.......................... 28-29
Suspended, definition of.......................... 6
Suspended sediment, definition of................. 5
Suspended-sediment concentration, definition of... 5
Suspended-sediment discharge, definition of....... 5
Suspended-sediment load, definition of............ 5

Terms, definition of.............................. 2-6
Tiderishi Creek near Jenera....................... 199
Tiffin River, at Evansport........................ 30-34
  at Stryker...................................... 28-29
Time-weighted average, definition of.............. 6
Tinkers Creek, at Bedford......................... 147-149
  at Twinsburg.................................... 144-146
  near Independence............................... 150-152
Toledo, Ottawa River at Toledo University, at..... 16-17
Tons per day, definition of....................... 6
Total coliform bacteria, definition of............ 2
Total load, definition of......................... 6
Total organism count, definition of............... 4
Total sediment discharge, definition of........... 5
Twinsburg, Tinkers Creek at....................... 144-146
Tymochtee Creek at Crawford....................... 90-91

Upper Sandusky, Sandusky River near............... 84-89

Vermilion, Vermilion River near................... 112-117
Vermilion River near Vermilion.................... 112-117

Water analysis.................................... 10
Water temperature................................. 10
Waterville, Maumee River at....................... 68-72
  Maumee River near............................... 62-66
Willoughby, Chagrin River at...................... 176-178
Wolf Creek, at Bettsville......................... 96-97
  East Branch, near Bettsville.................... 98-99
Woodville, Portage River at....................... 73
  Portage River at railroad bridge at............. 74-78
WRD, definition of................................ 6
WSP, definition of................................ 6

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FACTORS FOR CONVERTING U.S. CUSTOMARY UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the U.S. customary units published herein to the International System of Units (SI). Subsequent reports will contain both the U.S. customary and SI unit equivalents in the station manuscript descriptions until such time that all data will be published in SI units.

Multiply U.S. customary units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons